

OECD Social, Employment and Migration Working Papers
No. 142

Helping Displaced Workers Back Into Jobs After a Natural Disaster: Recent Experiences in OECD Countries

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https://dx.doi.org/10.1787/5k8zk8pn2542-en

OECD

Organisation de Coopération et de Développement Économiques
Organisation for Economic Co-operation and Development

29-Nov-2012

English - Or. English

DIRECTORATE FOR EMPLOYMENT, LABOUR AND SOCIAL AFFAIRS
EMPLOYMENT, LABOUR AND SOCIAL AFFAIRS COMMITTEE

OECD SOCIAL, EMPLOYMENT AND MIGRATION WORKING PAPERS No.142

HELPING DISPLACED WORKERS BACK INTO JOBS AFTER A NATURAL DISASTER: RECENT EXPERIENCES IN OECD COUNTRIES

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JEL codes: J08, J63, J65, J68, Q54

Key words : natural disaster, displacement, active labour market programme, unemployment benefits

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JT03331926

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ACKNOWLEDGEMENTS

This paper was prepared as part of the OECD's review on 'Helping displaced workers back into jobs by maintaining and upgrading their skills'. It was compiled using the responses to a questionnaire from the OECD Secretariat completed by delegates to the OECD Employment, Labour and Social Affairs Committee. The author would like to thank the delegates and public officials who helped supply these replies. The author is particularly grateful to Nick Montague from the New Zealand Department of Labour for very useful comments which greatly improved the quality of the questionnaire, Naoaki Kunishiro for excellent research assistance, particularly in compiling information about Japan, and Mark Keese, Glenda Quintini and delegates to the OECD Employment, Labour and Social Affairs Committee for helpful comments on an earlier version of the paper. The views expressed in this paper are those of the author and should not be attributed to the OECD or its member countries.

SUMMARY

Large-scale natural disasters can have long-lasting effects on the labour market in affected areas in addition to their humanitarian and economic cost. Mass evacuations and disruptions to housing, transport, social services and infrastructure can impede labour market participation. Firms may need to lay off workers, permanently or temporarily, as they deal with physical damage and loss of customers. Even if employment levels return to their pre-disaster levels, the mix of jobs and workers may have changed, so that skills shortages coexist with relatively high unemployment rates. Governments have an important role to play in helping prevent unnecessary job losses, providing income support and re-employment assistance to displaced workers while they find new jobs and creating the environment to encourage job creation as the recovery takes hold. This paper examines the labour market impact of recent natural disasters in six OECD countries, outlines labour market and income support policies implemented to help those affected and discusses the challenges of implementing such policies in the aftermath of a natural disaster.

RÉSUMÉ

Les catastrophes naturelles de grande ampleur peuvent avoir des effets durables sur le marché du travail dans les régions touchées, qui s'ajoutent à leur coût économique et humanitaire. Les évacuations de masse et la désorganisation du logement, des transports, des services sociaux et de l'infrastructure peuvent entraver l'activité sur le marché du travail. Les entreprises peuvent avoir à licencier des travailleurs, définitivement ou temporairement, pour cause de dégâts matériels et de perte de clientèle. Même si l'emploi retrouve ses niveaux d'avant la catastrophe, la composition de l'offre d'emplois et de main-d'œuvre peut avoir changé, ce qui peut se traduire simultanément par des pénuries de qualifications et des niveaux de chômage relativement élevés. Les autorités gouvernementales ont un rôle important à jouer pour aider à empêcher des pertes d'emplois inutiles, assurer aux travailleurs déplacés une garantie de revenu et une aide au retour à l'emploi, tout en trouvant de nouveaux emplois et en créant des conditions propices à la création d'emplois au fur et à mesure que la reprise se confirme. Ce document examine l'impact sur le marché du travail des catastrophes naturelles qui se sont produites récemment dans six pays de l'OCDE, expose dans leurs grandes lignes les politiques du marché du travail et de garantie de revenu mises en œuvre pour venir en aide aux victimes, et examine les difficultés d'application de ces mesures au lendemain d'une catastrophe naturelle.

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HELPING DISPLACED WORKERS BACK INTO JOBS AFTER A NATURAL DISASTER: RECENT EXPERIENCES IN OECD COUNTRIES

1. Introduction

1. A number of OECD countries have been struck by large-scale natural disasters in recent years, resulting in widespread damage, disruption and loss of life. While the immediate response to such disasters is often focused on rescue and emergency care, governments in affected countries have also implemented a range of labour market programmes to help workers, firms and households to recover. These encompass short-term measures, like income support, public works programmes and wage subsidies for workers who have been displaced due to temporary firm closures, as well as longer-term efforts to help communities rebuild and adjust to a new mix of job opportunities.

2. Due to the unpredictable nature of natural disasters, many of the policies implemented by labour ministries in response have been, by necessity, *ad hoc* in nature. However, many of the problems encountered in designing and implementing these policy responses are very similar across countries. The aim of this paper is to summarise the experiences of several OECD countries in responding to the labour market consequences of recent natural disasters. In doing so, common problems and best practice solutions can be identified to inform future responses. The review is by no means exhaustive and focuses mainly on policies and programmes implemented by labour ministries and related agencies. The response of emergency services as well as health, housing, transport, planning, infrastructure and economic policies will also affect the labour market impact of a natural disaster, but are beyond the scope of this paper.

3. The events studied in the paper are Hurricane Katrina in the United States in August 2005; the Chilean Earthquake and Tsunami in February 2010; the Canterbury Earthquakes in New Zealand in 2010 and 2011; the Queensland floods and cyclones in Australia in late 2010 and early 2011; the Great East Japan Earthquake and Tsunami in March 2011; and the Van Earthquake in Turkey in October 2011. Section 2 briefly describes each of the natural disasters studied in the paper, as well as their social and economic impact. Section 3 summarises the labour market impacts of the disasters, focusing on factors that affect labour supply, labour demand and mismatch between the two in the aftermath of a disaster. Section 4 describes income support measures for displaced workers. Section 5 outlines various supports to help firms retain and create jobs. Section 6 outlines disaster-related active labour market programmes, including training. Section 7 outlines some of the challenges countries faced in implementing disaster-related labour market programmes and measures to overcome them. Section 8 briefly concludes.

4. Much of the material in this paper was drawn from the very rich responses to an OECD Secretariat questionnaire provided by delegates to the OECD Employment, Labour and Social Affairs Committee. Where information was taken from other sources, the source is referenced.

2. Overview of a number of recent natural disasters

United States – Hurricane Katrina (2005)

5. Hurricane Katrina, which hit the Gulf Coast of the United States on 29 August 2005, was the most destructive natural disaster in US history and the deadliest since 1928 (White House, 2006). With winds of more than 200 kilometres per hour at its peak, the hurricane affected an area of 240 000 square kilometres. A major disaster was declared in Alabama, Louisiana and Mississippi, with the states of Florida and Georgia also affected. In the aftermath of the hurricane, storm surges and torrential rain caused

significant flooding across the affected region. In the city of New Orleans, most flood levees were breached and around 80% of the city was flooded (White House, 2006).

6. Around 1 833 lives were lost, 80% of these in New Orleans. The elderly were particularly vulnerable: 71% of victims in Louisiana were older than 60 years (White House, 2006). Around 1.1 million people over the age of 16 were evacuated in August 2005 (BLS, 2006). An estimated 275 000 homes were damaged or destroyed and more than 250 000 people were displaced. Many businesses sustained damage. For example, in Louisiana, 95% of all businesses were located in flooded areas, while in Mississippi, nearly half of all businesses were located in areas with 'catastrophic' storm damage (BLS, 2006).

7. Even before it made landfall, Hurricane Katrina disrupted oil production in the Gulf of Mexico, reducing production by more than one third and pushing up fuel prices across the United States. About 2.5 million people experienced electricity cuts and three million disruption to telephone lines (White House, 2006). In total, it is estimated that the total economic cost of Hurricane Katrina was USD 125-150 billion or around 1% of GDP, more than 2.5 times larger than the cost of the previous most destructive hurricane, Hurricane Andrew in 1992 (Committee on Homeland Security and Governmental Affairs, 2006).

Chile – Chilean Earthquake and Tsunami (2010)

8. The central Chilean coastal region of Maule was struck by an earthquake of magnitude 8.8 in the early hours of 27 February 2010. It was the second largest earthquake in Chilean history and among the largest ever recorded. The cities of Talcahuano, Arauco, Lota, Chigwell, Cañete and San Antonio sustained the greatest damage, although the earthquake was felt in a total of six regions, which account for 80% of Chile's total population. There was considerable damage in the capital Santiago. The earthquake triggered a strong tsunami which destroyed several villages along the coast and hit Juan Fernandez Island. A tsunami warning was issued for 53 countries around the Pacific rim, and minor damage was recorded as far away as Japan and the United States.

9. A total of 521 people were killed and a further 56 were recorded as missing. More than 900 towns and communities were affected, and 370 000 homes, or around 10% of the country's housing stock, were damaged or destroyed. Around two million people were made homeless as a result, with up to 20% of the population losing their houses in the worst-affected region. Damage to other infrastructure was also considerable: 73 hospitals, 4 012 schools (almost half of the schools in the affected areas) and 221 bridges were destroyed or damaged, as well as ports, roads, energy and communication infrastructure. Around 1.25 million school students were affected by school closures.

10. The overall impact on GDP was sharp but short-lived. Chilean GDP fell by 3% in the first quarter of 2010, but grew by 5% in the second quarter. However, the longer-term impact on the economy from damage to infrastructure may be significant. Potential output dropped by 1-1.5% during 2010 mainly due to a 3% decline in the capital stock. In the agriculture and fisheries industries, up to a quarter of capacity was lost (OECD, 2012). In total, the estimated cost of the earthquake to the national economy (in terms of damage and lost production) was USD 30 billion, or 17% of GDP.

Australia – Queensland floods and cyclones (2010/11)

11. From November 2010 to February 2011, a series of natural disasters caused extensive flooding in the state of Queensland in the north-east of Australia.[1] Heavier-than-usual rain in late 2010 and early 2011

1. Further flooding occurred in south-west Queensland in April 2011 and February 2012, but this paper will focus on the period between November 2010 and February 2011.

was exacerbated by the effects of Tropical Cyclones Tasha, Anthony and Yasi. Cyclone Yasi was the most powerful Cyclone to hit Queensland since 1918.

12. Thirty-six people were killed, most as the result of flash flooding. The whole state of Queensland, with an area of 1.7 million square kilometres, was declared a disaster zone. Severe flooding affected communities across a large area of southern, central and northern Queensland, and flash flooding washed away homes and businesses in a number of towns. Brisbane, Australia's third-largest city, was severely disrupted as thousands of homes and businesses were evacuated and inundated. In total, 15 500 people were evacuated. Over 27 000 houses and 3 500 businesses were affected by flood water and 411 schools were closed. Cyclone Yasi damaged 2 800 houses, almost one thousand of which were either completely destroyed or uninhabitable.

13. The economic impact of the floods and cyclones was considerable, partly because of the damage to infrastructure and partly because they affected such a large area of Queensland. Over half a million customers had their electricity supply cut, 9 100 kilometres of roads and 4 700 kilometres of the rail network were damaged. Damage to the rail and port infrastructure as well as flooding disrupted coal exports and many agricultural crops were lost. The aggregate impact of the disasters was large, but temporary. Australia's real GDP fell by 0.5% in the March quarter of 2011, but increased by 4.3% over the year to the March quarter of 2012. State-level production rose by a modest 0.9% in the March quarter of 2011, compared with 7.5% over the year to the March quarter 2012. In total, the estimated cost of the disaster in terms of damage and economic losses was around AUD 15.7 billion, or around 1% of GDP (World Bank and Queensland Reconstruction Authority, 2011).

New Zealand – Canterbury Earthquakes (2010/11)

14. A series of large earthquakes hit the Canterbury region of New Zealand's South Island in late 2010 and 2011. The two largest and most destructive of these were a 7.1 magnitude earthquake which struck west of Christchurch, New Zealand's second-largest city, on 4 September 2010 and a 6.3 magnitude earthquake on 22 February 2011. This second quake caused substantial destruction of buildings, widespread land damage and rock falls and loss of life. A series of aftershocks in June and December 2011 caused further destruction but no further loss of life.

15. In total, 185 people lost their lives in the February earthquake and many more were seriously injured. More than 100 000 houses were damaged or destroyed. Liquefaction of land has made it impossible to rebuild many of these houses in the same places. Between 14 000 and 15 000 houses were lost as a result of the earthquakes. The population of Christchurch City fell by almost 9 000 in the year to June 2011, although many people moved to nearby areas. More than 60% of businesses in central Christchurch were closed: half were unable to operate at all and half relocated to makeshift premises. Many schools were closed, forcing students and their families to relocate. Damage to infrastructure was severe: almost half of Christchurch's roads required rebuilding, along with parts of the water supply and sewerage systems.

16. New Zealand Treasury estimates that the financial cost of damage (excluding business disruption and clean-up costs) of the earthquakes was around NZD 20 billion, or around 10% of New Zealand's GDP, with more than half due to damage to residential property. Economic activity in the Canterbury region fell substantially in the aftermath of the earthquakes, as businesses closed and tourist arrivals fell. At the national level, it is estimated that GDP was around 1.5% lower in 2011 after the earthquakes than it would have been otherwise. In the longer term, the economic impact could also be significant as resources are used to rebuild, rather than expand, the capital stock and higher insurance premiums push up prices and service imports.

Japan – Great East Japan Earthquake and Tsunami (2011)

17. The Great East Japan Earthquake struck on 11 March 2011, situated 130 km from the Ojika Peninsula. With a magnitude of 9.0, it was the biggest earthquake ever measured in Japan (Japan's Reconstruction Agency, 2012). The huge tsunami that was generated by this earthquake as well as the aftershocks triggered serious damage, particularly in the three prefectures of Tohoku: Iwate, Miyagi and Fukushima. In particular, this included the Tepco Fukushima Daiichi nuclear plant, where all power sources were lost and the reactors overheated, resulting in a huge leak of radioactivity.

18. The extent and scale of the damage caused by the disaster was enormous, even compared to previous large-scale disasters in Japan. As of May 2012, 15 858 people were dead, 6 107 injured, 3 317 missing and more than 340 000 people were evacuated to temporary housing. Furthermore, 130 000 houses were completely destroyed, 260 000 houses were partially destroyed and 710 000 houses were damaged. In addition, more than 110 000 people were compelled to evacuate due to the nuclear accident (Japan's Reconstruction Agency, 2012).

19. According to a report from the Cabinet Office, the direct economic impact of the earthquake and tsunami was estimated to be 16.9 trillion yen or around 4% of GDP, including 10.4 trillion yen of building damage. Apart from the huge tsunami and earthquake, there were widespread secondary impacts, such as power supply restrictions and supply chain disruption. This, in turn, caused the severe disruption of economic activities not only in the directly-affected areas but throughout the country and, to a lesser extent, in several other countries due to disruptions to global supply chains (Cabinet Office, 2011). In fact, Japan's real GDP fell by 2.0% in the first quarter of 2011 (or a fall of 7.9% in annual terms). However it recovered to fall by only 0.8% overall in the 2011 calendar year, reflecting the general improvement in the Japanese economy (Cabinet Office, 2012).

Turkey – Van Earthquake (2011)

20. A 7.2 magnitude earthquake struck the province of Van in eastern Turkey on 23 October 2011. The epicentre was about 30 kilometres from the cities of Van (regional population 527 000) and Erciş (regional population 159 000). Both cities and the surrounding regions suffered substantial damage, due in part to the poor quality of some buildings. A series of aftershocks, the biggest on 9 November 2011, caused additional damage (Erdik, *et al.*, 2012; CEDIM, 2011).

21. The earthquakes caused the deaths of 644 people and resulted in injuries to more than 2 500, most in the 23 October quake. The official estimate of housing damage found that more than 28 000 houses were damaged beyond repair and a further 55 000 received some damage. About 200 000 people required emergency accommodation in temporary shelters. A number of hospitals and around 28% of classrooms in the region were damaged and were temporarily unusable. Fortunately, the earthquake struck on a Sunday when no children were at school. Nevertheless, schools in the region were closed for more than two months after the earthquake. Damage to infrastructure was relatively light: most areas had electricity restored within hours or a few days, although Van's water supply was disrupted for one week. In general, damage to roads and rail networks was light (Erdik, *et al*., 2012).

22. Estimates of the economic cost of the earthquake range from between USD one and two billion. Erdik, *et al.* (2012) estimate that the cost was USD 1.2 billion in damage and USD 0.3 billion in indirect losses. This is equivalent to around one-third of the gross value added of Van province or about 0.2% of Turkey's national gross value added. The losses were considerably smaller than those from the 1999 Izmit earthquake, primarily because the Van region is among the poorest in Turkey (Erdik, *et al*., 2012).

3. Labour market impact of natural disasters

23. Natural disasters can have significant impacts on labour markets in affected regions. There are often widespread disruptions to labour supply due to loss of life, injury and evacuation of people to areas outside the disaster zone. Damage to physical and social infrastructure as well as long-term health problems caused by the disaster can create additional barriers to labour supply. Labour demand is also affected as firms are forced to close or relocate to other regions. Even firms that are viable in the longer term can face difficulties operating in the immediate aftermath of a disaster due to disruption to their supply chains and to electricity, communications and other infrastructure. Finally, the impact of a disaster on the mix of people, firms and industries in the disaster-affected region can lead to a mismatch between available jobs and the skills of job seekers. Skills shortages are a common problem in the rebuilding phase.

24. There is clear evidence of a deterioration in labour market conditions in the aftermath of the disasters examined in this paper. For example, while employment rose by 1.6% between December 2010 and December 2011 in New Zealand as a whole, it fell by 8.3% in the Canterbury region and by 14% in Christchurch. In Chile, it is estimated that the disaster caused the loss of 90 000 jobs, although the net impact was less because other jobs were created through government programmes and during rebuilding. In Japan, the number of unemployed people in the three most-affected prefectures (Iwate, Miyagi and Fukushima) increased by almost one quarter in the three months following the disaster. In the United States, non-farm payroll employment fell by 241 000 in Louisiana and by 14 000 in Mississippi in the two months following Hurricane Katrina, equivalent to 12% and 1%, respectively, of total state employment. Not surprisingly, the impacts were greatest in the most-affected regions: employment dropped by 35% in New Orleans and by 15% in Gulfport-Biloxi (BLS, 2006).

25. Nevertheless, it is very difficult to estimate the *full* impact of a disaster on labour market indicators such as employment and unemployment because of the need to make assumptions about how the labour market would have fared in the absence of a disaster. This is particularly the case in disasters that occurred during the 'Great Recession' of 2008/09 and its aftermath, when labour market conditions were already difficult. Labour market indicators may also be unreliable if standard surveys cannot be undertaken in disaster-affected regions (see Box 1 for an overview of the efforts made to ensure that accurate labour force statistics were collected in the aftermath of Hurricane Katrina). Rather than trying to gauge the overall labour market impact of the disasters, the remainder of this section will focus on a number of key factors that affect the labour market impact of disasters – barriers to labour supply, disruption to firms and skills mismatches due to structural changes – and their implications for policy makers.

Box 1. Conducting the labour force survey in the wake of Hurricane Katrina[1]

The United States labour force survey, called the Current Population Survey (CPS), is jointly conducted each month by the Census Bureau and the Bureau of Labor Statistics. In the aftermath of Hurricane Katrina, a huge effort was made to ensure that accurate statistics were collected, including additional information about the labour market situation of people who were evacuated. The timely collection of these data has helped researchers and policy makers understand the impact of the hurricane on those affected (e.g. see the special August 2006 issue of the Monthly Labor Review for several studies using CPS data to estimate the labour market impacts of Hurricane Katrina (http://www.bls.gov/opub/mlr/2006/08/contents.htm)).

The most immediate operational problem was that many field staff who conduct the survey were themselves displaced from their homes or were difficult to contact. Contacting staff was made more difficult because they work from home, rather than a central office. Fortunately, the hurricane struck three weeks before the next monthly survey was due and, within a week, almost 80% of field staff had been located (all were located within six weeks). Because of evacuations, the number of field staff in the worst-affected regions was reduced, although because many other people had also been evacuated, remaining staff had a reduced workload.

Mass evacuations also caused problems when designing the sample and undertaking the survey. The CPS does not usually collect information on people living in shelters, hotels, hospitals, nursing homes or other institutions. As such, people who were living in temporary accommodation such as evacuation centres, hotels or stadiums were not sampled in the aftermath of the hurricane due to the difficulties of locating them and extending the normal sampling frame to accommodate them. In addition, many evacuees moved out of temporary accommodation within a very short timeframe, increasing the chance that they could be counted more than once. However, people who had been evacuated and were staying in another household (e.g. with family or friends) were included in the sample. Procedures were also changed to allow people who were temporarily living in a trailer on their destroyed property to be interviewed if their property was chosen as part of the sample. Nevertheless, there was a large reduction in interviews in affected areas in the months after the hurricane. The number of interviews fell by 36% in Louisiana and 13% in Mississippi in September compared with August 2005, and by smaller amounts in Florida and Texas.

The CPS is weighted to reflect the whole population using, in part, state-level population controls for items including ethnicity, race and age. However, because there were sizeable interstate shifts in population after the hurricane, the normal weighting procedure could potentially produce biased estimates. After considering several alternative sources of information, the US Postal Service's National Change of Address file was used to quickly gather data on interstate movements and correct population controls for these movements. Longer term, the sampling frame needs to be adjusted because many of the original sampling units (houses) will never be rebuilt in the same places.

Finally, the opportunity was taken to add extra questions to the CPS to gain additional insights into the situation of evacuees. Originally planned only for the first few months after the hurricane, the additional questions were ultimately asked each month for 12 months. The questions identify evacuees, their labour market situation, previous address, intentions to return and whether they actually returned to their previous address.

1. This box is based on Cahoon *et al*. (2006).

Barriers to labour supply

26. Mass evacuations following natural disasters 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 many cases, it may not be practical for people to return home quickly and what starts as evacuation becomes permanent migration to a new area. In Japan, the two prefectures most affected by the earthquake and tsunami (Iwate and Miyagi) experienced net outflows of people in the first four months after the disaster, and have still not regained their pre-disaster population, almost 18 months afterwards. In Fukushima, where the nuclear accident resulted in widespread evacuations, the prefecture's population remains more than 43 000 smaller than prior to the disaster and

more people continue to leave the prefecture each month than arrive.[2] It is likely that many of these evacuees will never return to their homes.

27. Likewise, in New Zealand, many people permanently relocated elsewhere, although not always very far from their previous residences. Change-of-address data from New Zealand Post suggest that around 80% of people from Christchurch who moved relocated to elsewhere in the Canterbury region. Re-enrolment data from the Ministry of Education show that 28% of students who changed schools moved to the North Island, around half to Auckland. People who relocate to a new area may need additional assistance to find work as their social networks – an important job-search tool for many jobseekers – are likely to be disrupted or will be less helpful in their new location. As such, it is important that programmes to help displaced workers find new jobs are not just focused on the regions affected by the disaster.

28. In the United States there were stark differences in labour market outcomes for evacuees who returned to their pre-hurricane addresses compared with those that did not (BLS, 2006; Vigdor, 2007; Groen and Polivka, 2008; Zissimopoulos and Karoly, 2010). Ten months after the hurricane, the unemployment rate for evacuees who had returned to their homes was 6%, much lower than for those who had not returned (26%). Labour force participation rates were about the same for both groups, but employment rates were higher for those who had returned to their homes (61% compared with 46%) (BLS, 2006).

29. After controlling for various demographic characteristics, Vigdor (2007) finds that there is essentially no impact on employment (relative to their pre-disaster situation) for evacuees who return home, but evacuees who remain away from home suffer from substantial reductions in employment, although this impact falls over time. Groen and Polivka (2008) suggest that the explanation lies in the extent of disruption to lives caused by evacuation. Non-returning evacuees tended to be from areas where destruction was greatest. On average, 29% of housing units suffered severe damage in the areas from which non-returnees were evacuated, compared with 6% for those who returned. They find a clear negative correlation between the extent of damage in their home regions and the subsequent employment rate of evacuees. This highlights the difficulties of improving labour market outcomes for evacuees. Assistance should be provided to help those who can to return to their previous location, but in some cases, this will not be possible so it will be necessary to support evacuees to find work in the regions to which they have moved.

30. Even if people are not evacuated or can return to their homes relatively quickly after a disaster, disruptions to transport, communication and other services as well as the effort required to repair damage can create a barrier to ongoing labour force participation. Family and health issues (including physical, mental and emotional issues) can also have a negative impact. It is beyond the scope of this paper to examine all the possible barriers to labour supply in the wake of a natural disaster. However, some examples are useful to identify the types of issues that policy makers concerned with minimising the labour market consequences of a natural disaster need to consider. In many cases, these factors will be outside the control of the labour ministry. This means that coordination between different ministries and levels of government, as well as with non-government organisations, is vital.

31. In New Zealand, the increase in stress caused by bereavement, injury and other consequences of the earthquakes and aftershocks appears to have had an impact on labour supply. A survey of employers by the Department of Labour found that 24% of firms reported an increase in the use of sick leave, 55% an increase in fatigue and 68% an increase in stress. Disruptions to child care arrangements and schools were also widespread. Three weeks after the February earthquake, 38% of early childhood education services

2 . These data are from the monthly Report on Internal Migration in Japan produced by the Japan Statistics Bureau. At the time of writing, the latest data available are for July 2012.

remained closed. Many schools were forced to relocate, with students taken by bus to new locations, a long commute for many because of road damage. A Ministry of Health survey of staff working in disability support services found that the earthquakes led to an increase in family problems and mental health issues for most staff. Anecdotal evidence suggests that the additional burden of caring for children and families disrupted by the earthquakes led to many women withdrawing from work. Additional barriers to work included disruption to public transportation and a lack of suitable accommodation while houses were being repaired or rebuilt. The slow process of receiving insurance payouts and authorisation to rebuild also increased uncertainty and financial strains for affected families and reduced labour mobility.

Firm disruptions and closures

32. Many firms close, temporarily or permanently, in the aftermath of a natural disaster, putting jobs at risk. Firms face a number of barriers to continuing operations, and these may change over time. Initially, firms may have to close because of damage, lack of electricity or other vital services, difficult or dangerous access, or due to the evacuation of owners, staff and customers. Some firms will be able to reopen quickly once, for example, electricity has been restored. In these cases, providing short-term assistance to firms to maintain employment can help reduce the risk of job displacement. Others will take much longer or may never reopen in the same place.

33. In the United States, 38% of businesses in Louisiana and Mississippi were within 100 miles of the path of Hurricane Katrina's centre. Around 73% of businesses in Louisiana and 63% in Mississippi were in the most-affected areas of those states, accounting for 76% and 66% of state-wide employment, respectively. In Louisiana, 18 078 establishments were located in flooded areas and a further 98 in areas suffering from extensive or catastrophic storm damage.[3] In Mississippi, 1 700 establishments were in areas with extensive or catastrophic damage and 71 in flooded areas. Hundreds more businesses were in areas with minor or moderate damage.[4]

34. A number of surveys of businesses in affected areas highlight some of the barriers facing businesses in the months following the disaster. Lam *et al*. (2009) report that 25% of businesses in New Orleans had reopened within four months, 38% within ten months and 66% within two years of Hurricane Katrina. The biggest barrier to reopening in the early months related to uncertainty about the ability of flood levees to protect the city from further disasters as well as lack of customers. After ten months, the main concerns related to the adequacy of infrastructure (including levees, utilities and communication) as well as problems finding staff. Businesses that remained unopened were most likely to report that damage to premises or problems with financing were the main barriers to reopening their businesses. The Jefferson Parish Economic Development Commission (2006) surveyed the largest employers in the region in early 2006. They found that three quarters of businesses were having trouble finding skilled staff and that unfilled vacancies for all businesses amounted to the equivalent of around 13% of total employment. Many businesses had significant numbers of former workers who had been displaced and did not expect them to return to work. The biggest barrier to displaced workers returning to work was lack of housing. Around one third of businesses were providing temporary housing for their employees.

35. In Australia, 25% of businesses in Queensland experienced a major disruption or closed due to the floods (National Australia Bank, 2011). The Chamber of Commerce and Industry Queensland (CCIQ) (2011) report that the extent of business interruption ranged from full or partial inundation (11%) to indirect effects due to the effect of the flooding on customers (56%), suppliers (45%) or staff (35%). Most

3 . Extensive damage is defined as a situation where some solid structures are destroyed, most structures sustain damage and most light structures are destroyed. Catastrophic damage is defined as a situation where most solid and all light structures are destroyed.

4 . These data are from the Bureau of Labor Statistics website: www.bls.gov/katrina/data.htm.

financial losses were relatively small: 55% of affected businesses report that the total lost earnings amounted to less than 10% of annual turnover. More than half of businesses were able to reopen within five days, but 17% remained closed for three weeks or more. When asked about the types of assistance they needed most, financial assistance with cash flow was the highest priority (CCIQ, 2011).

Structural change and labour market mismatch

36. Even if employment levels eventually return to their pre-disaster levels, the mix of industries and jobs available is often different than before the disaster. Some industries and groups of workers are more affected by job losses than others, and the new employment opportunities that emerge during the rebuilding phase are not always suited to the skills of those who have been displaced. The industries that are most affected by a natural disaster will depend on the industrial structure of the affected region. Nevertheless, some similarities emerge among the disasters studied in this paper. Service industries such as hospitality, tourism and retail trade were badly affected as visitor numbers dwindled and populations shrank. Small businesses tended to be the worst-hit, as well as agricultural and fishing activities. Emerging opportunities were mainly in construction. As a result of these changes, many job losses were borne by women, who were also less likely to be able to take advantage of new job opportunities during the reconstruction phase. More generally, there were often skill shortages coexisting with relatively high numbers of displaced workers.

37. In the Canterbury region of New Zealand, the largest job losses between December 2010 and December 2011were in the accommodation and food services (-37%), health care and social assistance (-13%) and construction industries (-13%).[5] Smaller falls in absolute terms but still significant as a proportion of previous employment levels occurred in the real estate (-38%) and arts and recreation (-21%) industries. Women and young people were particularly affected by changes in the sectoral composition of employment. In total, women's employment fell by 10% compared with 7% for men, the difference largely due to large falls in employment in female-dominated industries including retail, hospitality, health care and social assistance. Women also accounted for 70% of the increase in the number of people not in the labour force in Canterbury after the disaster.

38. In Chile, the most affected industries varied by region. In the Bío Bío and Maule regions, which suffered the greater net job losses, the agriculture, fishing, trade, tourism, commerce and service industries were most affected, whereas in areas with less damage, job losses tended to be concentrated in agriculture, fishing and commerce. Overall, micro and family businesses bore the brunt of damage, although in the most-affected regions, medium and large enterprises were also affected. Around 46% of jobs lost were held by women, but 85% of jobs created went to men so that, overall, women were more affected, accounting for 60% of net job losses.

39. In Japan, there was a sharp rise in construction and public-sector job offers at public employment services in the three most-affected prefectures in the months after the disaster and a relative shortage of applicants with the skills or qualifications to take up these jobs. Skill shortages in the health-sector were already evident prior to the disaster, but have worsened in its aftermath. By contrast, there were many more applicants than job offers in the food production industry, particularly in fish processing which employed many women in the affected coastal regions before the disaster. As a result, the share of women in the total number of unemployment benefit recipients rose steadily from around 50 to 59% between April 2011 and January 2012 (Higuchi, *et al*., 2012).

5 . The fall in construction employment was part of a national trend, but also reflects delays in rebuilding due to continuing aftershocks, and problems with insurance payouts and obtaining building consent.

40. In the first three months after Hurricane Katrina in the United States, all major industries in Louisiana lost jobs. The largest losses were in education and health services; leisure and hospitality; and trade, transportation and utilities. In Mississippi, job losses were concentrated in leisure and hospitality and manufacturing, while construction employment increased slightly over the same period (BLS, 2006). Overall, the disaster created large-scale shifts in the demand for skills in New Orleans. In the short-term most of the increase in demand was for construction workers, although the hospitality and housing sectors also experienced some growth due to demand from clean-up crews, government officials and NGOs, as well as because the housing stock was so badly damaged. In the longer-term, the smaller population led to a reduction in job opportunities in the retail and service sectors, as well as in the traditional tourism and hospitality sectors which provided much of New Orleans' employment prior to the disaster.

41. In Australia, the agriculture, coal mining and tourism industries were most affected by the disaster. Mining employment recovered quickly from short-term closures, but construction and tourism employment continued to struggle for a year after the disasters, although this is partly due to other factors including a general economic slowdown and the high Australian dollar. It is expected that demand for construction workers will increase in the wake of the disaster. Most large-scale reconstruction activities will take place in 2012. In 2011, there was some concern about skill shortages due to competition from the mining sector creating problems for reconstruction projects recruiting in some occupations, including engineers and construction managers (Queensland Reconstruction Authority, 2011). However, more recent analysis suggests that the Queensland labour market, and in particular the construction workforce, has some spare capacity to provide labour to reconstruction projects as a result of slowing activity in the mining sector.

4. Income support for displaced workers

42. In all the countries reviewed, workers who were displaced from their jobs because of the natural disaster were able to access unemployment benefits or short-time work benefits, usually under standard eligibility criteria (Table 1). Application procedures were simplified in some countries and usual waiting periods waived. For example, in New Zealand, unemployment benefit recipients were exempted from the requirement to attend the usual group seminar where they receive job-seeking advice and information about government services before receiving benefits. In Australia, benefit recipients could be exempted from the usual 'participation' requirement if, among other reasons, they were affected by the disaster or volunteered in the clean-up.

43. Several countries extended the normal length of unemployment benefits for those affected by the disaster. In Japan, unemployment benefit was extended to a maximum of 360 days in disaster-affected regions. Genda (2012) notes that the decision to extend the duration of unemployment benefits was a difficult one. Some policy-makers were concerned that long benefits could discourage people from returning to work. This concern was offset, to some extent, by limiting extended benefits only to the worst-affected areas where finding work was most difficult. Nevertheless, Genda (2012) suggests that future extensions of unemployment benefit duration in response to a natural disaster should be accompanied by an expansion in opportunities for the long-term unemployed to work on reconstruction projects or vocational training places.

44. In the United States, federally-funded Disaster Unemployment Assistance (DUA) was paid to eligible individuals who did not qualify for regular state unemployment insurance (UI) benefits (based on their prior wages or because they were self-employed) or who had exhausted their regular UI benefits. DUA is generally available for up to 26 weeks. However, the duration was extended for up to 39 weeks for Katrina victims. The extension of DUA for an additional 13 weeks also allowed eligible individuals who had originally received and exhausted UI benefits to subsequently receive DUA.

Table 1. Income support for workers who were permanently or temporarily displaced from their job as a result of the natural disaster

Australia	**Unemployment benefit** with standard eligibility criteria. Usually recipients are subject to a one-week waiting period, but this was waived in some cases of hardship resulting from the disaster. People receiving income support payments with a participation requirement could be exempt from the requirement for 2-13 weeks, depending on their individual circumstances, if: they lived in a disaster area or were impacted by the disaster, such as through injury or death of a family member; childcare facilities were unavailable; they were providing support to a family member affected; they volunteered in emergency relief, recovery or clean-up; or there were no viable job opportunities in their area due to the disaster. **Disaster Income Recovery Subsidy** at the same level as unemployment benefits is paid for up to 13 weeks to employees, small business persons and farmers who lost income as a result of the flooding and were not receiving other forms of income support or pension.
Chile	**Unemployment benefit** eligibility criteria were relaxed for those affected by the earthquake. The number of monthly employee contributions needed to qualify for benefits was lowered from 12 to eight (over the past 24 months). In addition, two extra payments were allowed from the Solidarity Fund for those who received their last payment between January and June 2010. **Emergency jobs** were created by the Ministry of Labor and Social Security, 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 debris, as well as public welfare. Participants were paid minimum wage and also received social protection.
Japan	**Unemployment benefit** of 45-80% of the previous wage for 90-360 days, depending on age, insured period and leaving reason. Besides an extension of 120 days of UB, measures were taken for the region most affected by the disasters to extend it again of 90 days more, up to a maximum of 360 days. Moreover, persons who have been compelled to stop working due to suspension or cessation of activity after the disaster and who cannot earn any wages or persons who were temporary out of job but who intend to be reemployed once the business resumes, have been able to receive unemployment benefits. These persons did not have to present proof of job search.
New Zealand	**Unemployment benefit** of around NZD 880 per month for a single person (more for couples or households with children), with standard eligibility criteria. The usual pre-benefit requirement to attend an information seminar was waived. **Earthquake Job Loss Cover** of NZD 240-400 per week, depending on previous working hours. Must have been employed prior to the earthquake and have lost their job due to damage to the employer's business or their employer has stopped paying them. Not available for those receiving other income support payments, workers compensation or for those whose employers were receiving an Earthquake Support Subsidy (see section 5). **Civil Defence payment for loss of livelihood** of around NZD 250-340 per week for people who were evacuated and lost wage or self-employment income because they could not get to work or their workplace was closed. Additional payments were available to cover accommodation and living costs for evacuees.
Turkey	**Unemployment benefit** with standard eligibility criteria and activation requirements for those who had become permanently unemployed. **Social work programme** created jobs for unemployed people who were registered with the State Employment Agency, aged over 18 years and not receiving a pension. Jobs could be full-time or part-time depending on the nature of the work, however part-time work was favoured to allow more people to participate in the programme. Participants received the minimum wage.
United States	**State Unemployment Insurance** with standard eligibility requirements (which vary by state). **Disaster Unemployment Assistance** funded by the Federal Emergency Management Agency for those who had exhausted UI or were not eligible (e.g. self-employed). The duration of DUA was extended by 13 weeks to 39 weeks and the deadlines for applying for DUA and providing documentation were extended.

Source: Responses to an OECD questionnaire.

45. In Australia and New Zealand, unemployment benefits are means-tested, based on household income. As a result, unemployed people who live in households where other household members work may not always be eligible for benefits. The self-employed are also not typically eligible. A number of alternative payments were made available in the aftermath of the disaster. In Australia, these benefits were around the same value as unemployment benefits, while in New Zealand, they were slightly higher in most

cases. In both cases, the benefits were not means-tested and were paid to those who were not receiving other benefits, including farmers and self-employed people who lost income as a result of the disaster. In Chile, eligibility criteria for accessing the Individual Savings Account component of unemployment benefits were relaxed, so that more people in the disaster-affected regions could access benefits. Additional payments were also made from the Solidarity Fund component of unemployment benefits to those affected.

46. In Chile and Turkey, the usefulness of unemployment benefits as the primary form of income support for displaced workers is limited by the prevalence of informal employment, where workers are typically not covered by benefits. In Chile, around 22% of wage earners were informal in 2006, and informal employment accounted for 38% of total employment (including self-employment) (Maurizio, 2012). In Turkey, 25% of employees and 42% of all workers (including the self-employed and unpaid family workers) were not registered for social insurance at the time of the earthquake, with rates of informality much higher in poorer regions such as Van.[6] In both countries, public works programmes played a role in providing income for workers displaced by the earthquakes. Around 20 000 people took part in Chile and almost 8 000 in Turkey. These programmes are ideal for providing income support for people in areas affected by disasters because they can be scaled up quickly and there are many useful tasks relating to clean-up and rebuilding that need to be done. However, it is important that these schemes are time-limited to avoid crowding out private sector job creation and locking workers into low-skilled jobs.[7]

5. Support for firms to preserve jobs

47. As discussed in section 3, firms face a number of constraints in the aftermath of a disaster that can impede their ability to operate. In some cases, these constraints will be resolved within days or weeks. In these cases, providing short-term assistance in the form of wage subsidies, grants or loans could help firms retain workers until they are fully operational, limiting unnecessary job displacement at a time when finding a new job is difficult. However, longer-term assistance for firms may be costly and inefficient if it only delays inevitable firm closures or subsidises worker retention that would have occurred anyway.[8]

48. In most countries, governments implemented wage subsidy programmes to encourage firms to retain workers after the disaster (Table 2). In Japan and Turkey, standard short-time work schemes were available for firms that temporarily laid off workers due to the disaster, while in other countries, special disaster-related subsidies were offered. The length of the subsidies was typically 6-12 months, although shorter in New Zealand. In general, wage subsidies were not available for workers who were receiving other forms of income support (see Section 4). A number of countries also allowed firms to defer their social insurance payments for a period after the disaster if payment would cause difficulty, or exempted them from payments completely.

6. Data for October 2011 from the Turkish Household Labour Force Survey.

7 . Both Japan and the United States also had public-sector job creation programmes to provide income for those affected who helped with clean-up operations.

8. The discussion of the optimal design of short-time work subsidies during a recession in OECD (2009, 2010) could apply equally here. Subsidies should be implemented quickly, well-targeted at the firms that need assistance the most, and apply only for a relatively short amount of time after the disaster to avoid impeding necessary structural adjustment.

Table 2. Wage and social security subsidies or deferrals for firms to maintain jobs

Australia	**Wage Assistance** of around AUD 470 per fortnight up to 26 weeks for public companies, businesses, primary producers and not-for-profit organisations in a subset of regions affected by the disaster that demonstrate that their business would not have been able to retain their employees without the wage assistance and were not receiving other forms of income support.
Chile	**Bonus Program for Recruitment** was extended to encourage private sector firms to maintain employment by subsidising retention through a payment of up to 50% of the minimum monthly wage for a period of up to six months.
Japan	**Employment Adjustment Subsidy** that covers a fixed percentage of wage costs (2/3 for large companies and 4/5 for small and medium sized companies) for firms that had to grant their employees leaves of absence resulting from the necessity to reduce business operations due to economic reasons including lack of demand following the disaster. Regardless of the period companies had already received the subsidy, an additional prescribed period of 300 days maximum was granted to companies as a disaster exemption for one year after the disaster. **Exemption from social security insurance premiums** was given to businesses in the affected regions who suffered significant difficulties in paying salaries because they had been damaged.
New Zealand	**Earthquake Support Subsidy** of NZD 500 or 300 per week, depending on working hours. The subsidy was payable for six weeks plus a further two weeks if necessary. Self-employed people and business owners who draw a wage from their business could apply, but it was not available for those receiving business interruption insurance. **Viable Earthquake Support Subsidy**, which is the second round of Earthquake Support Subsidy, can be received for between one and six weeks to cover wage costs, depending on what the business requires and the recommendation of the Recover Canterbury Coordinators. The amount of the subsidy decreases every two weeks.
Turkey	**Short-time work benefit** with standard eligibility criteria for those who were temporarily out of work and whose workplace had filed a claim for short-time work benefit. The payment is equivalent to 60% of gross average daily earnings from the past twelve months, and cannot exceed 150% of the minimum wage. The benefit can be paid for up to three months. **Social insurance premium deferrals** for employers affected by the earthquake for up to one year.

Source: Responses to OECD questionnaire.

49. In addition, all countries implemented programmes to provide short- and long-term financing for firms affected by the disaster. These typically involved interest-free or low-interest loans to businesses to cover repair and operational costs and were often limited to small or medium-sized businesses or those that were uninsured or underinsured. In Japan, there was also a focus on helping groups of small and medium-sized enterprises to repair facilities and equipment, in recognition of the disruption to supply chains caused by the disaster (Genda, 2012).

6. Special disaster-related re-employment services and labour market programmes

50. Workers displaced from their jobs due to the natural disasters studied in this paper were able to make use of standard re-employment assistance and active labour market programmes offered by the public employment service. In some cases, temporary or mobile offices were set up to provide these services to people who had been evacuated (see Section 7). In addition, most countries implemented special programmes for those affected by the disaster. In many cases, these were designed to overcome labour market mismatches after the disaster, such as by training displaced workers to help with reconstruction.

51. In the United States, job-search assistance was provided through One Stop Career Centers, including mobile units deployed in hurricane-affected areas. Louisiana worked with Texas Workforce Commission and local Workforce Development Boards to provide job-search assistance, including job fairs and access to online resources, in evacuation centres in Houston and Dallas. As the rebuilding phase commenced, the Louisiana Recovery authority launched a large media and internet campaign *The Road Home*, to let evacuees know about the status of their home communities, what resources were available to help them return home and available jobs. The Louisiana Department of Labor encouraged construction

and clean-up contractors to post job vacancies on their online job bank. They also coordinated with authorities in other states to highlight available job vacancies to evacuees.

52. In Chile, about 20 000 emergency jobs were created to help with the recovery and rebuilding process. Reconstruction training was expected to cover an additional 80 000 people, with an income maintenance payment for up to three months. Companies that were awarded contracts for rebuilding public infrastructure were required to hire a certain percentage of workers in disaster-affected areas. Low-skilled female labour market participation was badly affected by the earthquake because the industries where women worked prior to the earthquake, such as services, tourism and hospitality, were among the hardest hit. Therefore, the government implemented a skills training programme for women to help them find work in industries that are not traditionally female-dominated. However, the programme is only expected to show results in the medium- to long-term.

53. In Australia, the Queensland Natural Disasters Jobs and Skills Package was launched to help 10 000 people affected by the disaster through training and job placements to aid the reconstruction effort. Job seekers could take part in pre-employment training in occupations suffering skills shortages in affected areas and take up jobs on public infrastructure, community and environmental projects. Particular programmes were targeted at youth and indigenous people. A range of supports were also provided to help apprentices whose training or work had been interrupted by the disaster, including wage subsidies, hiring incentives, relocation and tool allowances and a register to help match displaced apprentices with job opportunities. Funding was also available to train existing workers in disaster-affected regions in areas of skills shortages.

54. In New Zealand, two additional labour market programmes were introduced in the wake of the disaster. The first, *Job for a local*, was a wage subsidy programme for employers who hire job seekers in the Canterbury region. The jobs created were required to be full-time, permanent and pay at least the minimum wage. A training plan had to be developed for new employees. The second programme was an extension of the existing *Straight to Work* programme, in which employers work with government agencies to find and train workers to fill skills or labour shortages. Additional places were created in the Canterbury region to meet demand from large firms working on the reconstruction effort. Under the programme, disadvantaged job seekers are trained for specific vacancies with participating firms, either through pre-employment or in-work training. As at March 2012, more than 1 000 people had participated in these two programmes.[9]

55. As well as the public works programme described in Section 4, Turkey organised five training courses in Bodrum and Fethiye to provide training to around 100 victims of the earthquake. The Provincial Employment and Vocational Training Committee has also organised training programmes for evacuees living in tents. More generally, vocational training, skills upgrading and occupational change courses will be organised to meet the changing needs of the local labour market in disaster-affected areas.

56. The *Japan as One* work project contained a range of programmes to help workers displaced by the disaster find new jobs. The role of the public employment service, *Hello Work*, was expanded to provide: on-site counselling at evacuation centres; more flexible provision of training; company information sessions targeting disaster victims; and special assistance for workers displaced from the agriculture, fishery and forestry industries and affected self-employed. Resources were also allocated to help those who wanted to relocate outside the disaster area find work, including by providing information on job vacancies and subsidising travel for interviews. Jobs were created re-building public infrastructure. Local construction companies were given priority when awarding reconstruction contracts and private employers were encouraged to submit reconstruction job offers to Hello Work. Vocational training

9. From 1 July 2012, these subsidy programmes were discontinued for new applicants.

opportunities were expanded in areas related to the reconstruction effort. There were also a range of subsidies offered to companies that hired disaster victims (see Section 5). These measures were expected to create and support around 580 000 jobs.

7. Policy implementation challenges

57. Delivering labour market policies and programmes in the aftermath of a natural disaster is fraught with unique challenges, arising from the scale and speed of the response needed, as well as the difficult environment in which policies and programmes must be implemented. This section will discuss some of the problems encountered by labour ministries and related agencies in helping firms and workers displaced by the natural disasters, and the strategies used to overcome the problems.

58. One of the first challenges for policy implementation is to let people affected by the disaster know about the types of assistance available, and ensure that contact with existing clients or benefit recipients is not lost. This is made more difficult when large numbers of people have been displaced from their homes and communications facilities have been damaged.

59. Typically, a multi-pronged communication strategy was used to inform disaster victims about available assistance, with the internet playing a key role. For example, the failure of the telephone system in Chile in the aftermath of the disaster made communicating with the public difficult, especially as many people were displaced from their homes. To overcome these problems, official information about the availability of assistance from government agencies was disseminated through the media. In New Zealand, the public were informed about assistance via all types of media, including radio, television and local newspapers. Affected people were advised to call a single government helpline, where they could get information on all types of assistance available, including accommodation, food and financial support. In Australia, the federal government has a dedicated Disaster Assist website used in cases of onshore or offshore disasters affecting Australians. The website provides public information and news on the disaster, relevant free-call numbers, information on government assistance for those affected and links to other relevant websites.

60. It is also important to have an adequate number of staff in service-delivery agencies, such as benefit administration or employment services, to quickly process a large influx of new applications or clients. This is made even more difficult when existing staff or assets (offices, vehicles, records, etc.) have been themselves affected by the disaster. It may be necessary to bring in staff from non-affected regions and set up temporary offices to replace those damaged in the disaster.

61. For example, in Japan the capacity of the public employment service, Hello Work, was expanded by increasing the number of staff members (both regular and non-regular) and bringing in staff temporarily from Hello Work offices in other prefectures. In this regard, being able to rely on a nationwide network of offices made it easier to bring in staff from other regions than if employment service provision was decentralised and managed at a regional level. Where Hello Work offices had been destroyed or were inaccessible, temporary offices were set up out of special windows in other establishments. Support for job seekers was also provided on-site at evacuation centres. The availability of these special consultations at evacuation centres were announced through posters, fliers and the media, including television and radio. Unemployment benefit applicants are usually required to apply for benefits in the Hello Work office nearest their place of residence. However, this requirement was waived so that people could apply at Hello Work offices in different jurisdictions.

62. In New Zealand, the Ministry of Social Development seconded staff from other regions to assist with administering payments and providing welfare services. The lack of housing was overcome by many Christchurch-based staff whose homes were not affected by the earthquakes providing temporary

accommodation to their colleagues. Caravans were also used to set up temporary offices in suburban areas. In Australia, the main state office of the Department of Education, Employment and Workplace Relations in Brisbane was closed for a protracted period, potentially causing problems with the administration of the privatised employment services network, Job Services Australia. However, the tasks usually undertaken by the Brisbane office were reallocated smoothly to the National Office and other state offices.

63. The United States faced particular problems because unemployment benefits and employment services are delivered by state governments and many people were evacuated interstate. At the time of the hurricane, the most affected state, Louisiana, did not have a system allowing either telephone or internet applications for unemployment benefits. The US Department of Labor, Employment and Training Administration's regional office in Dallas, Texas assisted Louisiana to implement its first call centre, and in the interim, one of the toll-free numbers usually used in Texas was allocated to Louisiana claimants. An ad-hoc internet-based application process was also developed so that other state administrations could help displaced Louisianans file their claims remotely. Finally, Louisiana purchased a number of mobile computer labs which were deployed in rural areas to help people process their claims when other forms of communication were not available. Further details about the difficulties encountered administering unemployment benefits are discussed in Box 2. Employment services were delivered through One-Stop Career Centers in the affected areas and through mobile One Stop Careers Centers. The states of Arkansas and Texas lent mobile units to Louisiana for several months. As a result of the disaster, there is now a national inventory of mobile One Stop Career Centers, so that states can quickly see what resources are available in the event of a disaster. Louisiana also coordinated with local Workforce Development Boards in Texas to provide job-search assistance and other employment services at evacuation shelters in Houston and Dallas.

64. The process of establishing identity and benefit eligibility of those eligible for assistance can be hampered if their documents have been destroyed in the disaster or are inaccessible. In the absence of proper documentation, there is a risk that people and/or businesses could fraudulently claim assistance to which they are not eligible. Nevertheless, most recipients of assistance will make claims in good faith and it is important to avoid cutting off assistance to those who genuinely need it but are unable to establish their identity or eligibility.

65. Most countries attempted to help people without documents access assistance by using existing government databases to cross-check eligibility. Some post-hoc auditing of individuals and firms that had received assistance was also undertaken to detect fraudulent claims. For example, in Turkey, when workplace records were not available as a consequence of the earthquake, qualifying tests for short-time working were carried out on the basis of records kept by the Social Security Institution and the Turkish Employment Agency. In Chile, agencies of the central government coordinated with regional and municipal agencies to check on the accuracy of information provided by people applying for assistance. However, authorities admit that it was very difficult to completely verify the information, given the poor conditions and loss of original documents.

66. In Australia, key government agencies agreed to replace lost or damaged documents free of charge for people living in areas affected by the disaster. Centrelink, the federal government agency responsible for delivering income support, also helped people provide proof of their identities so that payments could be made quickly. In early 2011, Centrelink set up a taskforce to investigate fraudulent claims for payments related to the Queensland floods. As at June 2011, more than 10 000 cases relating to disaster assistance payments had been referred for review or investigation and 12 had been referred for prosecution action. In general, Centrelink uses data matching as well as public tip-offs to target suspected fraud.

67. In Japan, where the documentation usually required to access unemployment benefits, such as payroll information, was not available, certificates of unemployment were created exceptionally based on personal testimony or based on the prevailing wage in the region concerned. Companies receiving

Employment Adjustment Subsidy were also subject to on-the-spot checks to prevent fraud. Companies that were found to be fraudulently claiming the subsidy were named publicly.

68. In the United States, claimants were allowed 90 days instead of the usual 21 days to provide proof of their identity and eligibility for unemployment benefits. Alternative administrative databases, such as social security and tax databases, were available to check information provided by claimants. However, the workload of staff was so high, particularly in Louisiana that many of these checks were not carried out. As a result, it is estimated that about USD 100 million was made in overpayments, accounting for about 7% of benefit paid. A number of reviews of the operation of the unemployment benefit system during Hurricane Katrina have made recommendations for improving processing in the future (see Box 2).

Box 2. Disaster-proofing unemployment benefit delivery in the United States

In the wake of Hurricane Katrina, there have been a number of reviews of the operation of the unemployment insurance (UI) and disaster unemployment assistance (DUA) schemes in the United States. These have resulted in a range of recommendations on how to improve the capacity of the states, which administer benefits, to respond quickly after a large-scale natural disaster while at the same time limiting fraud and overpayment (some of these measures would improve the operation of the UI system in general, even in the absence of a natural disaster). This box summarises the main findings and recommendations of the reviews by the Office of Inspector General of the Department of Labour (OIG, 2008) and the Information Technology Support Center (ITSC, 2008) on behalf of the National Unemployment Insurance Disaster Preparedness Effort.

There was a huge increase in the number of people accessing unemployment benefits after Hurricane Katrina. In Louisiana, there were 130 000 more claims for UI in the third quarter of 2005 compared with the same quarter in the previous year. In addition, more than 100 000 people were paid DUA in Louisiana in the first four months following the hurricane. This compares to a normal workload of around 3 000-4 000 claims per month in Louisiana. While the situation was not as severe in other states, there were also large increases in claims in Mississippi immediately following the hurricane and then subsequently in Texas, to where many people were evacuated.

As a result, the claims processing system was put under incredible strain. Prior to the hurricane, processing of claims in Louisiana relied almost exclusively on processing paper-based applications in local offices, which was difficult to implement in the wake of the hurricane. The rapid implementation of telephone and internet-based filing systems, with the assistance of neighbouring states, helped alleviate some of the processing bottlenecks. Some of the standard checks of identification were also waived, both to speed up processing and because people had difficulty getting access to documents. The extension of time for claimants to provide information and identification checks for DUA was intended to be temporary. The ETA instructed states that they should allow claimants 90 days, instead of the usual 21 days, to provide proof of identity. However, there were many instances where claimants were never required to provide documentation or only produced inadequate documentation. Several states did not make use of real-time checks of social security databases that could have helped verify claimants' identities. There were also cases where people were paid unemployment benefits from multiple states at the same time. It is estimated that Louisiana and Mississippi made more than USD 100 million of overpayments of Hurricane-related unemployment benefits, around 7% of total benefits paid.

The reviews' recommendations for improving the response to future disasters include the following measures:

- It is reasonable to allow claimants additional time to prove their identity and eligibility for benefits. However, payments should be suspended for claimants who are not able to provide adequate documentation after a reasonable time period. Attempts should also be made to cross-check eligibility and identity with other sources of information, such as social security or tax records, and benefits should be suspended if this information does not support the initial claim of eligibility. Automating this process would speed processing and provide an additional level of checks that are vital when standard procedures have been suspended.
- Claims processing should be modernized to use integrated internet and telephone-based systems for both new and continuing claims. Electronic processing allows capacity to be increased quickly and processing activities to be relocated if necessary, which are both very difficult using paper-based processing. Ongoing or potential claimants can also access the system regardless of their location, which is vital when people have been evacuated to another region or interstate. It is important that central electronic databases are 'mirrored' so that processing can continue if the main processing centre is damaged in the disaster. Automating some parts of the claims process, including by allowing claimants to query the status of their claim online, would free up scarce staff to deal with more complex issues that require human intervention.
- Payment by electronic funds transfer should be used as much as possible. Electronic payments are faster, less costly and more reliable than the postal service after a disaster when many people have been evacuated and homes have been destroyed. Using debit cards issued by the UI agency, as was done in Louisiana after Hurricane Katrina, is an improvement over paper cheques for making ongoing payments, but still relies on the postal service to deliver cards to new claimants.
- It would be inefficient and impractical for individual states to have sufficient processing capacity to deal with a 'mass unemployment event' such as a large-scale natural disaster. However, state UI agencies should develop formal plans for dealing with such events, and these plans should be tested in exercises that are integrated into their normal operations. Procedures should be put in place that allows disaster-affected states to draw on resources from other states to help with processing claims. For example, a state may develop memoranda of understanding with several other states that agree to provide processing capacity in the event of a disaster. Training manuals should be prepared so that interstate staff can quickly learn the eligibility rules and procedures of the affected state.

8. Conclusion and policy recommendations

69. Recent natural disasters in OECD countries have had significant labour market impacts. While the economy tends to recover relatively quickly at an aggregate level, especially as reconstruction begins, the labour market can be disrupted for a long time after a disaster. Even when employment levels return to their pre-disaster level, changes in the mix of jobs available can mean that skills shortages coexist with high numbers of displaced workers. Helping people get back into work as quickly as possible is vital to limit the cost of displacement. Income support may also be required to support families during these transitions.

70. Some job displacements can be prevented by providing short-term assistance, through wage or social security subsidies, to otherwise-viable firms to maintain jobs. Limiting these types of programmes to relatively short periods can prevent inefficiencies that arise from providing support for firms that are not viable in the longer-term as well as from subsidising firms that don't require support in the first place. Providing low-interest loans to help firms rebuild or meet operating expenses in the immediate aftermath of the disaster can also prevent unnecessary job displacements. Providing clear information about the types of assistance available to firms, reducing red-tape and the regulatory burden associated with rebuilding and quickly repairing public infrastructure can reduce uncertainty and help firms decide whether they can continue operating and employing workers.

71. Nevertheless, many firms may not be viable in the longer term, regardless of the support available. In this case, workers should be given assistance to help them move into new jobs. Displaced workers may need job-search assistance to find new jobs, or even retraining if their existing skills are not in demand in the post-disaster economy. Providing adequate job-matching services can help in this situation. However, targeting re-employment services only in the affected area risks missing out on assisting those who want or need to relocate to another area, or who have already left the disaster zone. Training programmes may also be of use to help displaced workers take up emerging job opportunities during the reconstruction phase if the required skills can be gained quickly. However, if extensive retraining is required, it may be better to focus on medium- and long-term skill needs, possibly linked to broader economic development plans, rather than those only needed during reconstruction. If skills shortages cannot be met by retraining the local labour force, it may be necessary to consider inward migration from elsewhere in the country or even abroad to avoid holding up reconstruction unnecessarily.

72. Unemployment benefits are a good way to quickly provide income support for people who have lost their jobs due to the natural disaster. However, it is necessary to be aware of gaps in the coverage of existing unemployment benefit programmes and have alternative arrangements for those who may not be covered (*e.g.* informal workers, the self-employed or those without a sufficiently long employment record). Public works programmes can also be useful in countries where benefit system is less developed or widespread because they can be implemented quickly and there is typically a lot of low-skilled work available assisting with the clean-up. However, these should be time-limited to avoid crowding out private-sector job creation and locking people into low-skilled jobs.

73. Implementing labour market and income support programmes in the aftermath of a disaster is complicated. It may be necessary to bring in resources temporarily from other regions to deal with a large increase in caseloads, especially if local workers are affected. Having internet- and telephone-based systems for registering claims can help speed up processing and allow people to access benefits when they have been physically displaced. It can also make it easier to bring in staff from other regions to help process applications because there is no need for them to be physically located in the disaster zone. Usual procedures for establishing eligibility for benefits or programmes may need to be suspended temporarily. However, these should be replaced, as far as possible, by checks using other administrative data sources

(*e.g*. taxation records) and claimants should be required to prove their eligibility within a reasonable amount of time.

74. Many barriers to labour market participation in the aftermath of a natural disaster – including lack of accommodation, transport, services as well as physical and mental health problems – are outside the control of labour ministries. Integrating service delivery and communications with other agencies (*e.g.* those dealing with disaster relief, housing, education, child care, health, etc.) could be an effective way to ensure that people can find out quickly what services are available. It may be useful to have a central website or telephone number for accessing information about all types of government assistance. One-stop-shops in disaster areas could also make it easier for disaster victims and prevent duplication between ministries. Targeting services at evacuation centres may be an effective way to reach those who are in greatest need and who are typically not very mobile.

75. While this paper has focused mainly on the role of government, in particularly labour ministries and related agencies, in responding to disasters, the private sector also has a major role to play. In the longer-term, government-created job programmes may be counterproductive and could crowd out the private-sector response. After the initial emergency response, perhaps the most useful role for governments is to create the right environment for the private-sector to respond effectively to a disaster and its aftermath by reducing red tape and uncertainty associated with reconstruction, restoring public infrastructure as quickly as possible and working with local authorities, firms and non-government organisations to plan for the medium- and long-term recovery of affected regions.

REFERENCES

Bureau of Labor Statistics (BLS) (2006), "The Labor Market Impact of Hurricane Katrina: An Overview", *Monthly Labor Review*, Vol. 129, No. 8, p. 3-10.

Cabinet Office (2011), www.bousai.go.jp/oshirase/h23/110624-1kisya.pdf, (in Japanese).

Cabinet Office (2012), *Quarterly Estimates of GDP: Apr.-Jun. 2012 (2nd Preliminary Estimates)*, www.esri.cao.go.jp/jp/sna/data/data_list/sokuhou/gaiyou/pdf/main_1.pdf, (in Japanese).

Cahoon, L., D. Herz, R. Ning, A. Polivka, M. Reed, E. Robison and G. Weyland (2006), "The Current Population Survey Response to Hurricane Katrina", *Monthly Labor Review*, Vol. 129, No. 8, pp. 40-51.

Center for Disaster Management and Risk Reduction Technology (CEDIM) (2011), Comparing the Current Impact of the Van Earthquake to Past Earthquakes in Eastern Turkey, CEDIM Forensic Earthquake Analysis Group, Report number 4.

Chamber of Commerce and Industry Queensland (CCIQ) (2011), *Impact of the Queensland Floods on Business: CCIQ Survey*, Brisbane.

Committee on Homeland Security and Governmental Affairs (2006), *Hurricane Katrina: A Nation Still Unprepared*, US Government Printing Office, Washington.

Erdik, M., Y. Kamer, M. Demircioglu and K. Sesetyan (2012), "Report on 2012 Van (Turkey) Earthquakes", *Proceedings of the International Symposium on Engineering Lessons Learned from the 2011 Great East Japan Earthquake*, pp. 1938-1949. 1-4 March 2012, Tokyo.

Genda, Y. (2012), "Future Employment Policy Suggested by the Post-Earthquake Response", *Japan Labor Review*, Vol. 9, No. 4, pp. 86-104.

Groen, J. and A. Polivka (2008), "The Effect of Hurricane Katrina on the Labor Market Outcomes of Evacuees", *American Economic Review*, Vol. 98, No. 2, pp. 43-48.

Higuchi, Y., T. Inui, T. Hosoi, I. Takabe and A. Kawakami (2012), "The Impact of the Great East Japan Earthquake on the Labor Market: Need to Resolve the Employment Mismatch in the Disaster-Stricken Areas", *Japan Labor Review*, Vol. 9, No. 4, pp. 4-21.

Information Technology Support Center (ITSC) (2008), *National Unemployment Insurance (UI) Disaster Preparedness Effort*.

Japan's Reconstruction Agency (2012), *Current situation and Measures for Reconstruction on 21 May 2012*, www.reconstruction.go.jp/topics/120521genjototorikumi.pdf, (in Japanese).

Jefferson Parish Economic Development Commission (2006), *Post-Katrina Workforce Evaluation Report*, JEDCO Economic Development Services Department.

Lam, N., K. Pace, R. Campanella, J. LeSage and H. Arenas (2009), "Business Return in New Orleans: Decision Making Amid Post-Katrina Uncertainty", *PLoS ONE*, Vol. 4, No. 8, pp. 1-10.

Maurizio, R. (2012), Labour Informality in Latin America: The Case of Argentina, Chile, Brazil and Peru, Brooks World Poverty Institute Working Paper No. 165.

National Australia Bank (2011), *Special Business Survey: Economic Impact of Recent Floods*, 8 February, Melbourne.

OECD (2009), *Employment Outlook*, OECD Publishing, Paris.

OECD (2010), *Employment Outlook*, OECD Publishing, Paris.

OECD (2012), *OECD Economic Surveys: Chile*, OECD Publishing, Paris.

Office of Inspector General (OIG) (2008), *Lack of Contingency Plans Contributed to More than $100 Million in Potential Overpayments of Hurricane-Related Unemployment Benefits*, US Department of Labor, Washington.

Queensland Reconstruction Authority (2011), *Resources for Reconstruction*, Discussion Paper no. 1, September.

United States Government Accountability Office (2006), *Small Business Administration: Actions Needed to Provide More Timely Disaster Assistance*, Washington.

Vigdor, J. (2007), "The Katrina Effect: Was there a Bright Side to the Evacuation of Greater New Orleans?", *B.E. Journal of Economic Analysis and Policy*, Vol. 7, No. 1, article 64.

White House (2006), *The Federal Response to Hurricane Katrina: Lessons Learned*, Washington.

World Bank and Queensland Reconstruction Authority (2011), *Queensland: Recovery and Reconstruction in the Aftermath of the 2010/2011 Flood Events and Cyclone Yasi*, World Bank, Washington.

Zissimopoulos, J. and L. Karoly (2007), "Employment and Self-Employment in the Wake of Hurricane Katrina", *Demography*, Vol. 47, No. 2, pp. 345-367.

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