



2011 Brisbane Floods. Photo: Angus Veitch

Key Topics:

- economics [2]
- modelling [3]
- multi-hazard [4]

Optimising post-disaster recovery interventions in Australia [5]


This project has estimated the impact of four natural hazards in recent Australian history on income of individuals residing in disaster-hit areas. By defining individuals' ability to return to their pre-disaster income levels as economic resilience, the research team focused on the following case studies: the 2009 Victorian Black Saturday bushfires, the 2009 Toodyay bushfires, 2013's Tropical Cyclone Oswald in Queensland, and the 2010-11 Queensland floods. Through real-life case studies, this research helps illustrate how these events—of different types, localities, and scales—impact and ripple through communities and the broader economy over time. The research found that the extent of the economic impact of disasters on individuals' income depends on the type, intensity, and location of the disaster. The project has produced four research reports pertaining to each case study, along with four policy briefs that summarised each report. The project also produced demographic profiling analyses for each disaster analysed. The findings from these four case studies were disseminated to a national audience through a webinar in August 2020.

Project: detail Notabs


Research team

Research leader

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Description

Australians are all too familiar with disasters arising from natural hazards, such as bushfires, cyclones, and floods. With climate change, we face the possibility of more frequent and intense natural hazards where they occur as in new and unexpected places.

This project has estimated the impact of four disasters in recent Australian history on income of individuals residing in disaster-hit areas. By defining individuals' ability to return to their pre-disaster income levels as economic resilience, the research team focused on the following case studies: The 2009 Victorian Black Saturday bushfires, the 2009 Toodyay bushfires, the 2013 Tropical Cyclone Oswald, and the 2010-11 Queensland floods. Through real-life case studies, this research helps illustrate how these events—of different types, localities, and scales—impact and ripple through communities and the broader economy over time.


The research has found that the extent of the economic impact of disasters on individuals' income depends on the type, intensity, and location of the disaster. This finding departs from most policy assumptions, which tend to put all the disasters into the same basket when designing relief and recovery programs.

An additional clear insight obtained in this research is that 'economic smallness' is a point of vulnerability. In particular, low income earners, small-business owners and part-time workers are more likely to lose income following a disaster. Middle and high-income earners, full-time workers and owners of larger businesses are far less likely to lose income; indeed, they might even earn more.


Overall, this research has revealed disaster costs that would not normally be identified by the direct damage estimates. This research has also demonstrated that the burden of lost income due to the disasters is not borne equally. That is, the income gap routinely increased after disasters. This research suggests that policymakers need to better understand the socioeconomics of disasters and formulate public policies to better distribute scarce budgets and resources towards vulnerable socioeconomic groups and employment sectors that are more sensitive to disasters.

[Read the final report here.](#), [19]

Download key case study
research reports and policy briefs
including 2009 Toodyay bushfire, 2009 Black
Saturday bushfires, 2010-11 Queensland floods,
2013 Tropical Cyclone *Oswald*



[20]

Download:
 Pre-disaster multi-hazard damage and economic loss estimation model - project overview [21]

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[26]



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ECONOMICS, FLOOD

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[31]



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[38]



Community and economic impact of Black Saturday investigated in Journal
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[39]



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[43]



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[44]



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[45]



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[46]



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





















24 JUN 2016

[47]

Publications

Year	Type	Citation
2021	Report	Ulubasoglu, M. [6] Optimising post-disaster recovery interventions in Australia - final project report [19]. (Bushfire and Natural Hazards CRC, 2021). Google Scholar [48] BibTeX [49] EndNote XML [50]
2021	Report	Ulubasoglu, M. [6] Guidance note for replication of case studies - Black Saturday, Tropical Cyclone Oswald, Queensland floods and Toodyay bushfire [51]. (Bushfire and Natural Hazards CRC, 2021). Google Scholar [52] BibTeX [53] EndNote XML [54]
2020	Report	Ulubasoglu, M. [6] Disasters and economic resilience in small regional communities: the case of Toodyay [55]. (Bushfire and Natural Hazards CRC, 2020). Google Scholar [56] BibTeX [57] EndNote XML [58]
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2020	Report	Ulubasoglu, M. [6] & Onder, Y. [63] Disasters and economic resilience: the effects of the Black Saturday bushfires on individual income [64]. (Bushfire and Natural Hazards CRC, 2020). Google Scholar [65] BibTeX [66] EndNote XML [67]
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2019	Conference Paper	Ulubasoglu, M. [6] & Beaini, F. [8] Disasters and economic resilience in small regional communities: the case of Toodyay [72]. <i>AFAC19 powered by INTERSCHUTZ - Bushfire and Natural Hazards CRC Annual Conference 2019</i> [73]. (2019). Google Scholar [74] BibTeX [75] EndNote XML [76]
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2019	Report	Beaini, F. [8] & Ulubasoglu, M. [6] Demographic profiling: Western Australia Toodyay bushfires 2009 case study [84]. (Bushfire and Natural Hazards CRC, 2019). Google Scholar [85] BibTeX [86] EndNote XML [87]
2019	Report	Ulubasoglu, M. [6] Optimising post-disaster recovery interventions in Australia: annual project report 2018-19 [88]. (Bushfire and Natural Hazards CRC , 2019). Google Scholar [89] BibTeX [90] EndNote XML [91]
2018	Conference Paper	Ulubasoglu, M. [6] Disasters and economic resilience: income effects of the Black Saturday bushfires on disaster-hit individuals [92]. <i>AFAC18</i> (Bushfire and Natural Hazards CRC, 2018). Google Scholar [93] BibTeX [94] EndNote XML [95]
2018	Conference Paper	Bates, J. [96] Research proceedings from the 2018 Bushfire and Natural Hazards CRC and AFAC Conference [97]. <i>Bushfire and Natural Hazards CRC & AFAC annual conference 2017</i> (Bushfire and Natural Hazards CRC, 2018). Google Scholar [98] BibTeX [99] EndNote XML [100]
2018	Journal Article	Rahman, H. [101] Earthquakes don't kill, built environment does: evidence from cross-country data [102]. <i>Economic Modelling</i> 70 , 458-468 (2018). DOI [103] Google Scholar [104] BibTeX [105] EndNote XML [106]
2018	Journal Article	Ulubasoglu, M. [6], Rahman, M. [107], Onder, Y. [63], Chen, Y. [108] & Rajabifard, A. [109] Floods, bushfires and sectoral economic output in Australia, 1978-2014 [110]. <i>Economic Record</i> 95 , 58-74 (2018). Google Scholar [111] BibTeX [112] EndNote XML [113]
2018	Report	Beaini, F. [8] & Ulubasoglu, M. [6] Demographic profiling: Victorian bushfires 2009 case study [115]. (Bushfire and Natural Hazards CRC, 2018). Google Scholar [116] BibTeX [117] EndNote XML [118]
2017	Conference Paper	Rumsewicz, M. [119] Research proceedings from the 2017 Bushfire and Natural Hazards CRC and AFAC Conference [120]. <i>Bushfire and Natural Hazards CRC & AFAC annual conference 2017</i> (Bushfire and Natural Hazards CRC, 2017). Google Scholar [121] BibTeX [122] EndNote XML [123]
2017	Conference Paper	Ulubasoglu, M. [6] & Rahman, M. [107] Unpacking the sectoral income effects of natural disasters: evidence from the 2010-11 Queensland floods [124]. <i>AFAC17</i> (Bushfire and Natural Hazards CRC, 2017). Google Scholar [125] BibTeX [126] EndNote XML [127]
2017	Report	Ulubasoglu, M. [6] Pre-disaster multi-hazard damage and economic loss estimation model: annual project report 2016-17 [128]. (Bushfire and Natural Hazards CRC, 2017). Google Scholar [129] BibTeX [130] EndNote XML [131]
2016	Report	Ulubasoglu, M. [6] & Rajabifard, A. [109] Pre-disaster multi-hazard damage and economic loss estimation model: Annual project report 2015-2016 [132]. (Bushfire and Natural Hazards CRC, 2016). Google Scholar [133] BibTeX [134] EndNote XML [135]
2015	Conference Paper	Rahman, M. [107] <i>et al.</i> Bringing hazard and economic modellers together: a spatial platform for damage and losses visualisation - peer viewed [136]. <i>Adelaide Conference 2015</i> (2015). Google Scholar [137] BibTeX [138] EndNote XML [139]
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2015	Report	Rajabifard, A. [109] Pre-disaster multihazard damage and economic loss estimation model: Annual project report 2014-2015 [152]. (Bushfire and Natural Hazards CRC, 2015). Google Scholar [153] BibTeX [154] EndNote XML [155]

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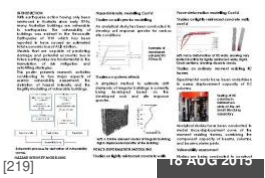


[218] 26 AUG 2014

A pre-disaster multi-hazard damage and economic loss estimation model for Australia

[218]

Australia has experienced a number of natural disasters throughout history that have significantly impacted...



[219] 16 AUG 2015

Seismic Vulnerability Assessment of Buildings in Australia

[219]

EARTHQUAKE [220], MITIGATION [184]

This poster present research activities undertaken in the University of Melbourne and Swinburne University of...



[221] 11 SEP 2015

Design & Implementation of pre-disaster hazard loss estimation platform

[221]

ECONOMICS [2], MODELLING [3]

The platform developed and utilised for this work is the Pre-disaster Hazard Loss Estimation Platform (PHILEP...



[222] 11 SEP 2015

Effects of natural disasters on sectoral economic development: Evidence from Australia

[222]

ECONOMICS [2], MODELLING [3]

Using a unique dataset observed over 1990-2014, we estimate the impact of natural disasters on sector-...



[223] 11 SEP 2015

Bringing hazard and economic modellers together

[223]

ECONOMICS [2], MODELLING [3]

A paper on the use of a spatial platform for damage and loss visualization to bring together hazard and...



[224] 11 SEP 2015

Reviewing past hazard events in Australia and Victoria

[224]

ECONOMICS [2], MODELLING [3]

In order to better understand the history of natural disasters in Australia as a whole, and also solely in...



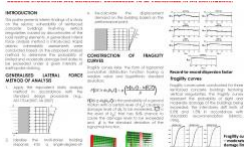
[225] 12 AUG 2016

Pre-disaster multi-hazard damage and economic loss estimation model

[225]

DECISION MAKING [173], ECONOMICS [2]

This project is investigating, at the national level, the economic impact of natural disasters on sectoral...



[226] 12 AUG 2018

Seismic vulnerability assessment of irregular reinforced concrete buildings in Australia

[226]
INFRASTRUCTURE [227], RESILIENCE [185]

This poster introduces a rapid seismic assessment method for reinforced concrete buildings in regions of low...



[228] 18 SEP 2018

Disasters and economic resilience: Income effects of the Black Saturday Bushfires on disaster-hit individuals

[228]
ECONOMICS [2], RECOVERY [170]

We explore the impact of the most destructive bushfire disaster ever to hit Australia on the disaster-hit...

27 AUG 2019

Disaster and economic resilience in small regional communities: the case of Toodyay

[229]
FIRE [196], OPTIMISATION [230]

We explore the effects of a small bushfire on the income trajectory of employed residents of Toodyay, a...

Linked Projects

Mapping and understanding bushfire and natural hazard vulnerability and risks at the institutional scale [231]

ECONOMICS AND STRATEGIC DECISIONS [232]

Prof Roger Jones
Victoria University [233]



[233]

Economics of natural hazards [234]

ECONOMICS AND STRATEGIC DECISIONS [232]

Dr Veronique Florec
University of Western Australia [235]



[235]

Improved decision support for natural hazard risk reduction [236]

ECONOMICS AND STRATEGIC DECISIONS [232]

Prof Holger Maier
University of Adelaide [237]



[237]

Using realistic disaster scenario analysis to understand natural hazard impacts and emergency management requirements [238]

SCENARIOS AND LOSS ANALYSIS [239]

Dr Matthew Mason
University of Queensland [240]



[240]

An analysis of building losses and human fatalities from natural disasters [241]

SCENARIOS AND LOSS ANALYSIS [239]

Dr Katharine Haynes
University of Wollongong [242]



[242]

<https://www.bnhcrc.com.au/people/fbeaini> [9] <https://www.bnhcrc.com.au/people/epikusa> [10] <https://www.bnhcrc.com.au/organisations/dewnr> [11] <https://www.bnhcrc.com.au/people/hfoster> [12] <https://www.bnhcrc.com.au/organisations/emv> [13] <https://www.bnhcrc.com.au/people/jhoj> [14] <https://www.bnhcrc.com.au/organisations/igem-0> [15] <https://www.bnhcrc.com.au/people/mdrew> [16] <https://www.bnhcrc.com.au/organisations/qra> [17] <https://www.bnhcrc.com.au/people/mcnaught> [18] <https://www.bnhcrc.com.au/organisations/dfes> [19] <https://www.bnhcrc.com.au/publications/biblio/bnh-7890> [20] <https://www.bnhcrc.com.au/resources/casestudies> [21] https://www.youtube.com/watch?v=RlgTzT_rnE [22] <https://www.bnhcrc.com.au/news/blogpost/mulubasoglu/2021/it-can-t-all-be-insured-counting-hidden-economic-impact-floods-and> [23] <https://www.bnhcrc.com.au/news/2021/new-online-march-2021> [24] <https://www.bnhcrc.com.au/news/2021/new-online-january-2021> [25] 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