

## **First Pass Risk Assessment of Climate Risk to Foodstore Chains Across Australia raises questions for Insurability and Local Residents**

Launched Thursday 6 December 2018, UNFCCC COP24 Negotiations, Katowice, Poland

Continent wide review reveals 131 supermarket outlets in Australia are currently at significant risk of flooding, bushfires and coastal inundation according to a report released today by The Cross Dependency Initiative (XDI),

After climate change modelling is applied to a supermarket's assumed life span of 80 years, the number of outlets at risk rises to almost 200 due to worsening climate impacts, undermining insurability and raising questions over community food security during extreme weather.

XDI assessed climate risk on all supermarket stores owned by Woolworths, Coles and Aldi across the entire country. Covering 2182 outlets, the analysis applied climate change modelling and historic and projected data for seven hazards across 7.5 million square kilometres down to each individual store.

The supermarkets were tested with historic extreme weather data pre-1990, then tested 80 years into the future based on current emission trends and global scenarios for climate change.

### **Key Findings:**

1. Currently: On average over 6% of super markets are already at excessive levels of damage and disruption risk – levels not typically insurable (Average Annual Losses more than 1% asset value).
2. Looking forward: Risk increases to almost 9% of the entire portfolio of the supermarket chains. Of these, more than half show “severe risk” (Average Annual Losses more than 10% asset value).
3. Currently: the most significant hazard is flooding (87 outlets), followed by Bushfire (18 outlets) and coastal inundation (4 outlets). However, within the design life of these buildings (80 years) coastal inundation will rise to ‘severely’ to affect 56 outlets.
4. Overall Woolworths has the highest number of stores exposed to climate change (97/1003), followed by Coles (72/809) and Aldi (27/370).
5. By 2100, Woolworths is projected to have the highest percentage of stores at risk (9.7%), followed closely by Coles with (8.8%) then Aldi (7.3%).
6. Assumed modern design of stores means low risks from wind damage and subsidence in drought.
7. Highest risk supermarkets in each state are identified below. Metro maps are appended in the headline report.

“This is a wake up call. We set out to benchmark the sector, but the results were higher than expected. Asset owners should be concerned and it's also relevant to customers” said Dr Karl Mallon, Director of Science for XDI, presenting the report at UNFCCC COP24 in Poland. “Food supply is critical and needs climate planning”.

The analysis is in line with calls from Australian Prudential Regulation Authority (APRA) for more climate disclosure, and is structured to meet the specifications of the Task Force for Climate related Financial Disclosure (TCFD) and the European Bank for Reconstruction and Development (EBRD) recommendations for reporting on physical climate risks.

“As yet these three companies have not produced any asset level reporting, so XDI has used common design specifications across all stores. We'd now like to engage with the companies to refine the vulnerability analysis for each store we've identified as highly exposed”, said Dr Mallon. “This is a whole new type of climate intelligence. Quantifying climate risk is a boon to building resilience in the face of climate change”

To download the report go to **[xdi.systems](http://xdi.systems)**.

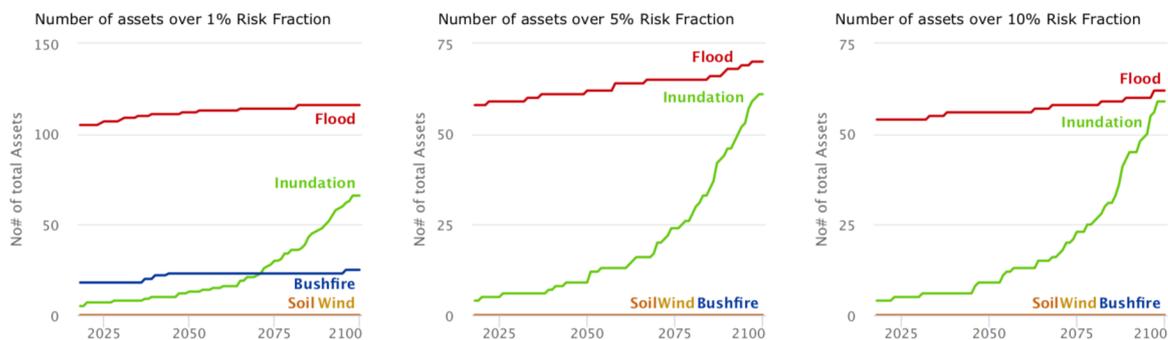
Risk maps for specific suburbs upon request: Jackie Lamb [jackie@climaterisk.com.au](mailto:jackie@climaterisk.com.au) +61 (0) 433 807 812.

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### Notes on Analysis:

1. All supermarkets are assumed to be of the same age, built to modern specifications. They are therefore at low risk from soil subsidence and wind damage.
2. The analysis assumes the same design, including a standard flood height of 0.1m (ie: slab on ground) Changing the floor height to 0.5m reduced the number of at-risk stores by 9% (Aldi), 28% (Coles) and 35% (Woolworths).
3. Impacts include total or partial damage, loss of power, and/or loss of access by customers.
4. The nominal threshold for un-insurability is taken to be an Annual Average Loss exceeding 1% of the asset value.
5. The Risk Cost Fraction is the Average Annual Cost of damage divided by the asset value. Risk Cost Fractions above 1% are taken as becoming 'uninsurable', above 10% are considered at 'severe' risk. Extracts from the reports below, all outlets:



6. Insurance may be commercial or self-insurance. Flood and bushfire are normally insurable, whereas standard commercial cover is not available for coastal inundation or subsidence in Australia.
7. In the financial services sector, APRA has promoted the adoption of the guidelines from the Taskforce for Climate Related Financial Disclosures (TCFD).
8. Capital city risk maps are appended on the report. Other locations by request.

### Frequently Asked Questions

#### What does XDI stand for?

XDI stands for the Cross Dependency Initiative, a company using specialised risk engines to compute the costs of damage and disruption from flooding, coastal inundation, wildfire, drought and wind storms.

#### Were the supermarket companies involved?

No. To ensure the neutrality and independence of the study all supermarkets were assigned the same design specifications and assumed to meet the wind and soils standard on their respective locations. Store specific data will be included in the next round of assessments.

#### Where does the data come from?

Over 1,000 terabytes of data has been analysed for these reports. Data sources include CSIRO, Geosciences Australia, University of NSW, University of Queensland, BOM, National Oceanographic and Atmospheric Administration USA (NOAA), IPCC 5<sup>th</sup> assessment report, state fire services, state tide and wave gauge administrators.

## Extract from Main Report and Chain Specific reports

Percentage of the portfolio exceeding various risk Cost Fraction thresholds by time window.

ALL

Threshold (%)	Year 2020	Year 2050	Year 2080	Year 2100
1.0 %	6.05 %	6.55 %	7.24 %	8.94 %
5.0 %	2.84 %	3.21 %	4.03 %	5.32 %
10.0 %	2.52 %	2.66 %	3.48 %	4.90 %

ALDI:

Threshold (%)	Year 2020	Year 2050	Year 2080	Year 2100
1.0 %	4.86 %	5.14 %	5.68 %	7.30 %
5.0 %	2.97 %	3.51 %	4.86 %	5.41 %
10.0 %	2.70 %	2.97 %	4.32 %	5.14 %

COLES:

Threshold (%)	Year 2020	Year 2050	Year 2080	Year 2100
1.0 %	6.30 %	6.67 %	7.29 %	8.78 %
5.0 %	2.97 %	3.09 %	3.96 %	5.07 %
10.0 %	2.47 %	2.47 %	3.09 %	4.45 %

Woolworths:

Threshold (%)	Year 2020	Year 2050	Year 2080	Year 2100
1.0 %	6.28 %	6.98 %	7.78 %	9.67 %
5.0 %	2.69 %	3.19 %	3.79 %	5.48 %
10.0 %	2.49 %	2.69 %	3.49 %	5.18 %