Context of the Quick Risk Estimation (QRE) Tool

Hazard Classification

- Hazard classification outlined by the UNISDR
- Aligned to the 10 Essentials for MCR Scorecard and Sendai Framework
- Sustainable Development Goals

Decision Making Framework

- Assess and score exposure
- Assess and score vulnerability
- Assess and score current level of response or actions

QRE Tool

Designed for the purposes of identifying and understanding current and future risks / stress / shocks and exposure threats to both human and physical assets.

Who can use the tool?

- Cities participating in the MCR Campaign, private sector other sectors

© 2017 Deloitte Touche Tohmatsu. All rights reserved.

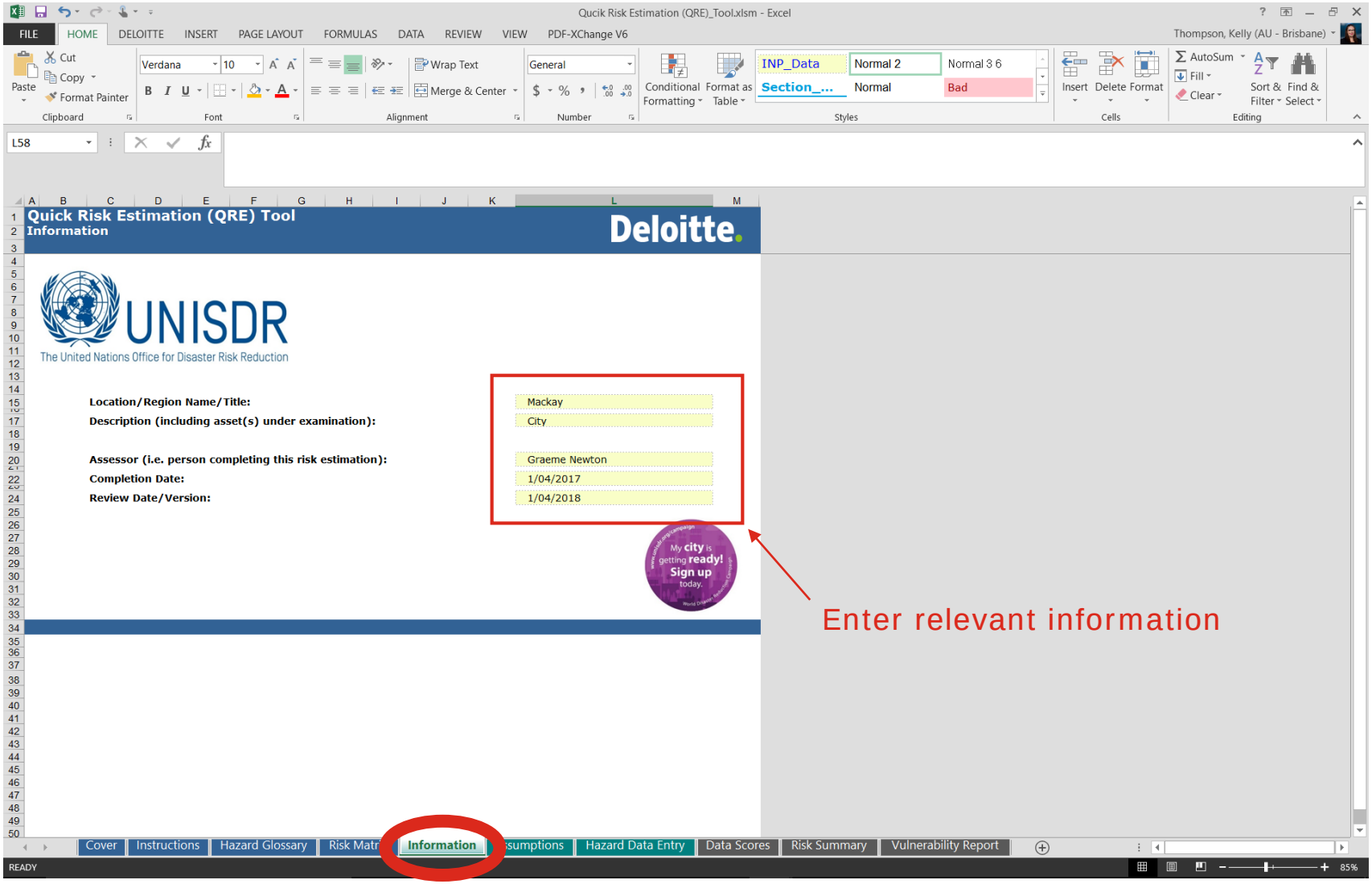
Step 1

Provide location, region and/or asset information

© 2017 Deloitte Touche Tohmatsu. All rights reserved.

Step One

To begin using the QRE Tool use the 'Information' tab to enter the location, region and/or asset specific information that identifies and defines the scope of this risk assessment.



© 2017 Deloitte Touche Tohmatsu. All rights reserved.

Step 2

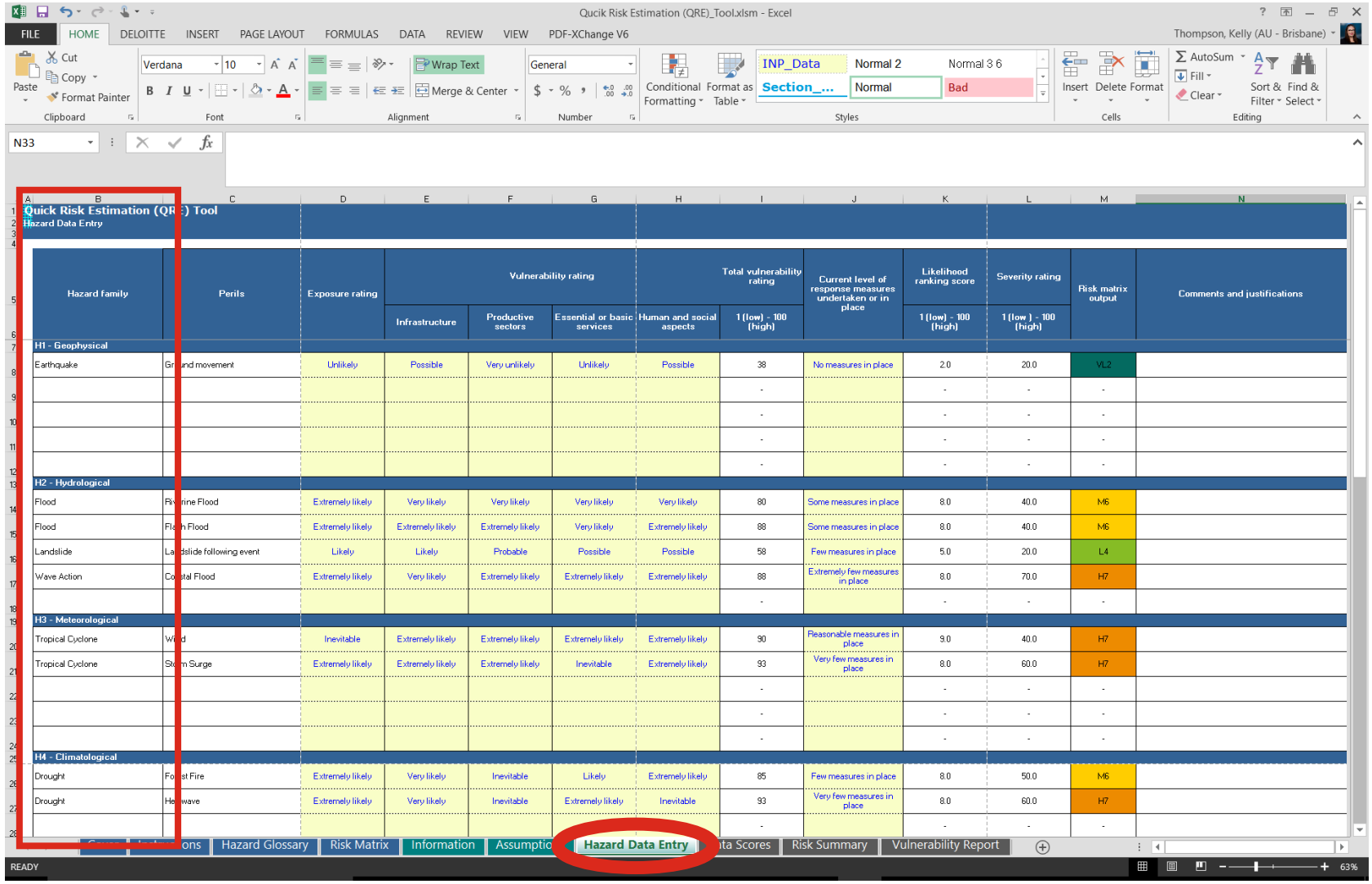
Identify hazard families and sub-families

© 2017 Deloitte Touche Tohmatsu. All rights reserved.

Step 2

Refer to Column B in the 'Hazard Data Entry' tab.

- Identify the hazard families and sub-families relevant to the location being assessed, in ‘Data Fields’ tab.



Quick Risk Estimation (QRE) Tool
Hazard Data Entry

Hazard family	Perils	Exposure rating	Vulnerability rating: Infrastructure	Vulnerability rating: Productive sectors	Vulnerability rating: Essential or basic services	Vulnerability rating: Human and social aspects	Total vulnerability rating: 1 (low) - 100 (high)	Current level of response measures undertaken or in place	Likelihood ranking score: 1 (low) - 100 (high)	Severity rating: 1 (low) - 100 (high)	Risk matrix output	Comments and justifications
H1 - Geophysical												
Earthquake	Ground movement	Unlikely	Possible	Very unlikely	Unlikely	Possible	38	No measures in place	2.0	20.0	VL2	
							-		-	-	-	
							-		-	-	-	
							-		-	-	-	
							-		-	-	-	
H2 - Hydrological												
Flood	Riverine Flood	Extremely likely	Very likely	Very likely	Very likely	Very likely	80	Some measures in place	8.0	40.0	M6	
Flood	Flash Flood	Extremely likely	Extremely likely	Extremely likely	Very likely	Extremely likely	88	Some measures in place	8.0	40.0	M6	
Landslide	Landslide following event	Likely	Likely	Probable	Possible	Possible	58	Few measures in place	5.0	20.0	L4	
Wave Action	Coastal Flood	Extremely likely	Very likely	Extremely likely	Extremely likely	Extremely likely	88	Extremely few measures in place	8.0	70.0	H7	
							-		-	-	-	
H3 - Meteorological												
Tropical Cyclone	Wind	Inevitable	Extremely likely	Extremely likely	Extremely likely	Extremely likely	90	Reasonable measures in place	9.0	40.0	H7	
Tropical Cyclone	Storm Surge	Extremely likely	Extremely likely	Extremely likely	Inevitable	Extremely likely	93	Very few measures in place	8.0	60.0	H7	
							-		-	-	-	
							-		-	-	-	
							-		-	-	-	
H4 - Climatological												
Drought	Forest Fire	Extremely likely	Very likely	Inevitable	Likely	Extremely likely	85	Few measures in place	8.0	50.0	M6	
Drought	Heatwave	Extremely likely	Very likely	Inevitable	Extremely likely	Inevitable	93	Very few measures in place	8.0	60.0	H7	
							-		-	-	-	

© 2017 Deloitte Touche Tohmatsu. All rights reserved.

Step 3

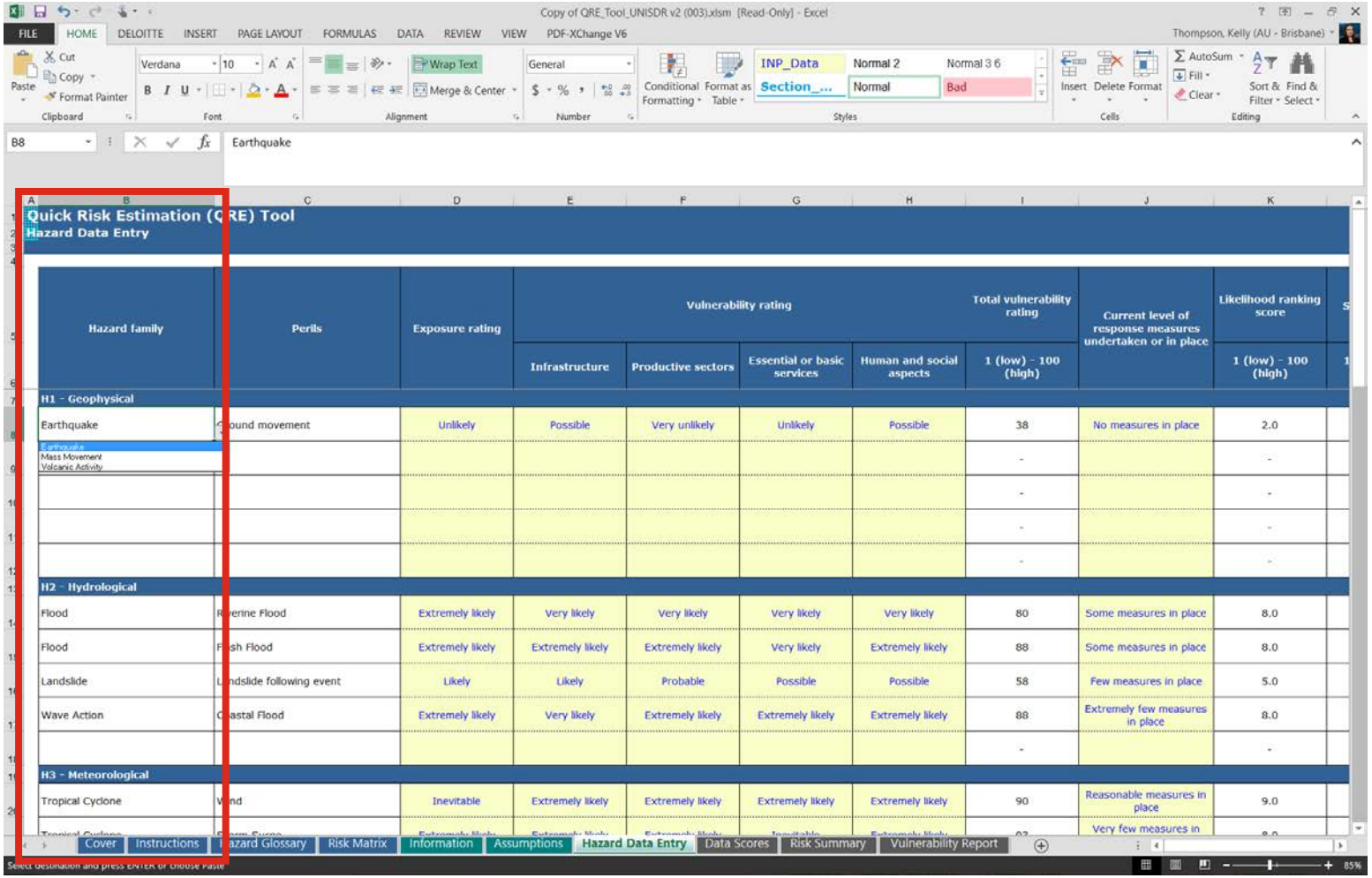
Identify main hazards

© 2017 Deloitte Touche Tohmatsu. All rights reserved.

Step 3

Refer to Columns B and C in the 'Hazard Data Entry' tab.

- Within each hazard family / sub-family identified in Step 2, select the main hazards relevant to the location being assessed.
- An identifier is automatically attached to each selected main hazard.



© 2017 Deloitte Touche Tohmatsu. All rights reserved.

Step 4

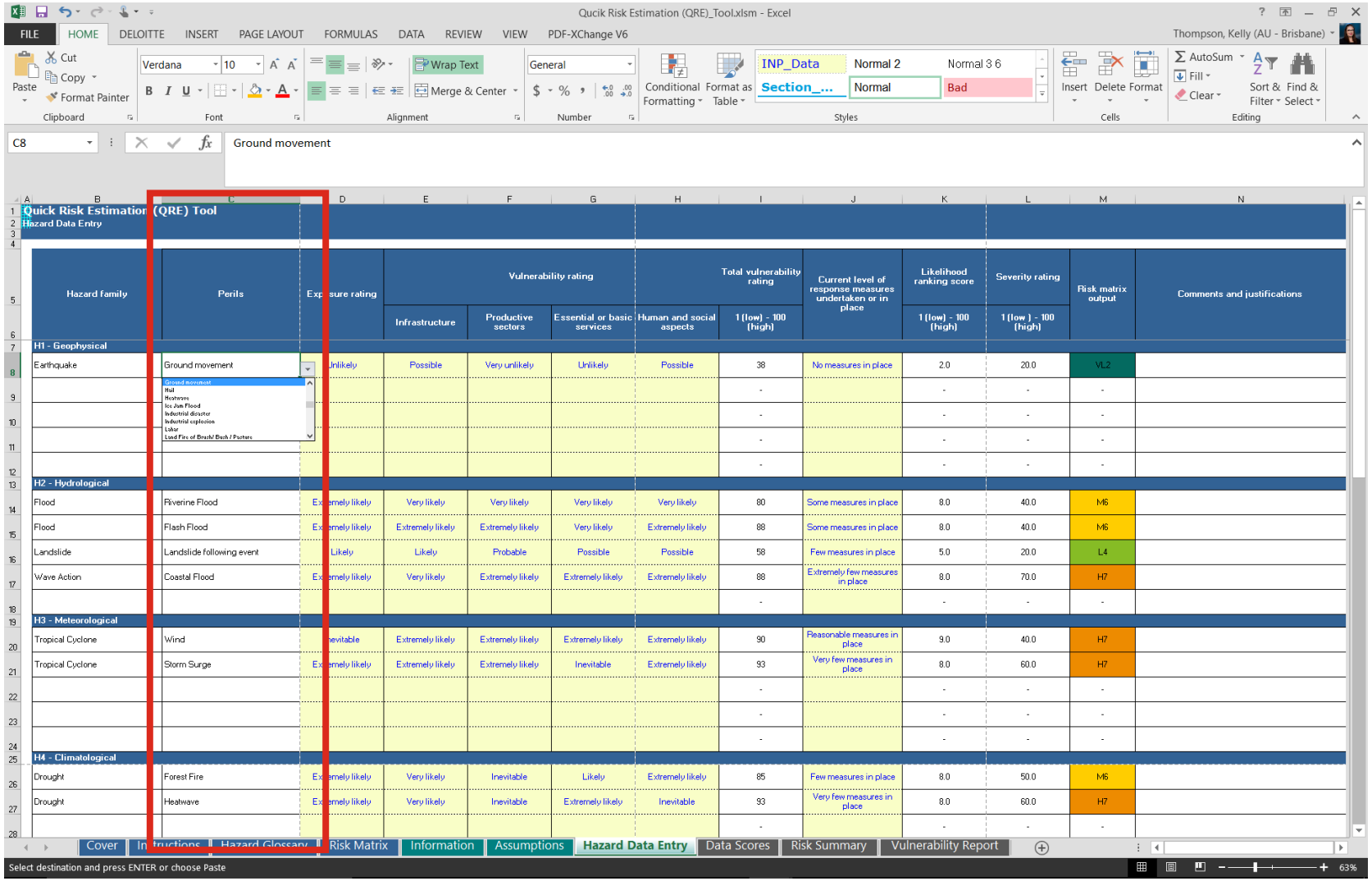
Select perils

© 2017 Deloitte Touche Tohmatsu. All rights reserved.

Step 4

Refer to Column C in the 'Hazard Data Entry' tab.

- For each main hazard identified, select associated perils relevant to the given location. Use one row per peril.



© 2017 Deloitte Touche Tohmatsu. All rights reserved.

Step 5

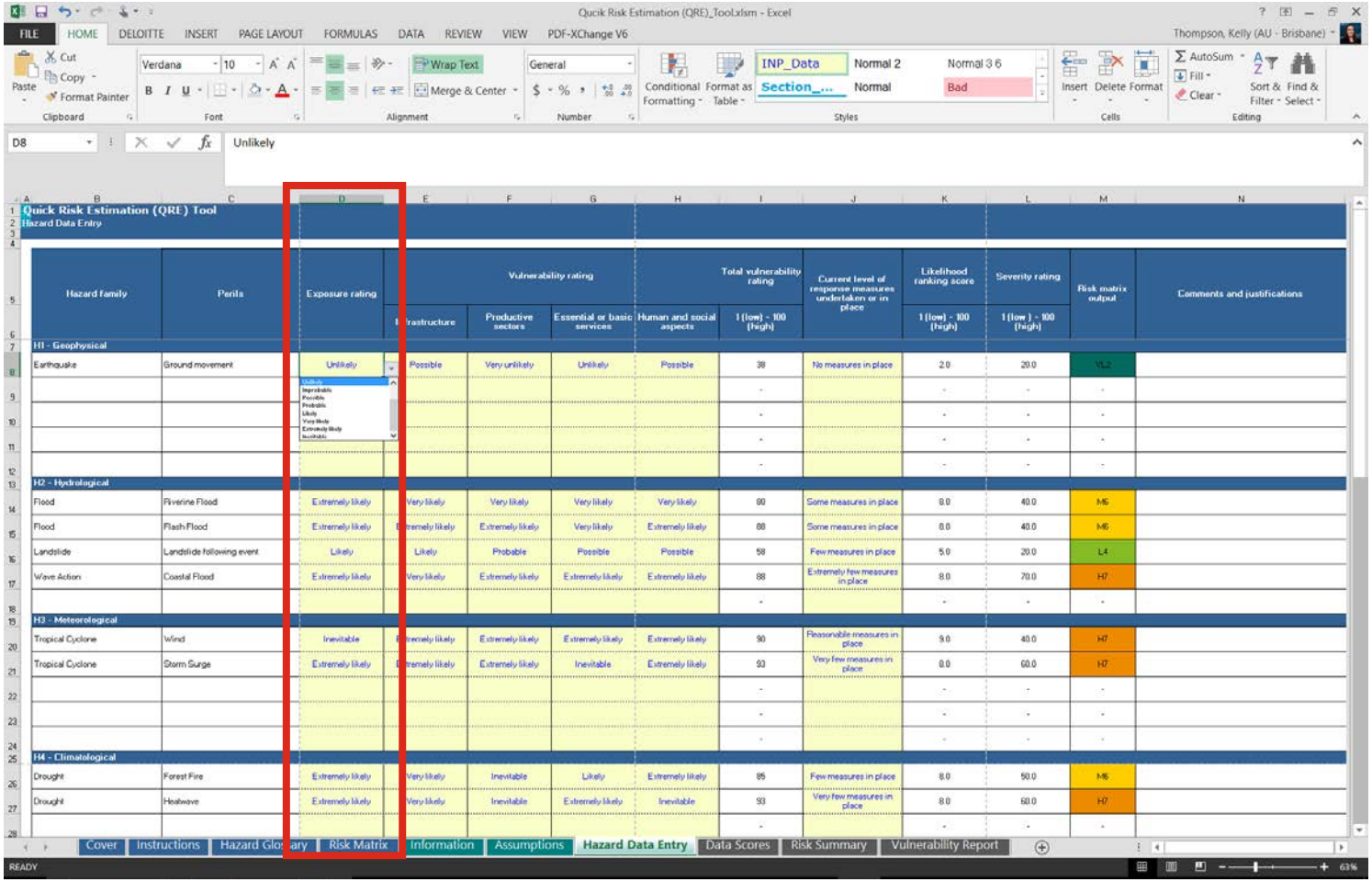
Assess exposure

© 2017 Deloitte Touche Tohmatsu. All rights reserved.

Step 5

Refer to Column D in the 'Hazard Data Entry' tab.

- For each selected peril, assess and score the exposure of the location being assessed using values from Unlikely to Likely.
- Record your justification for each evaluation score in Column N. This will enable validation as well as future revisions and tracking progress.



© 2017 Deloitte Touche Tohmatsu. All rights reserved.

Step 6

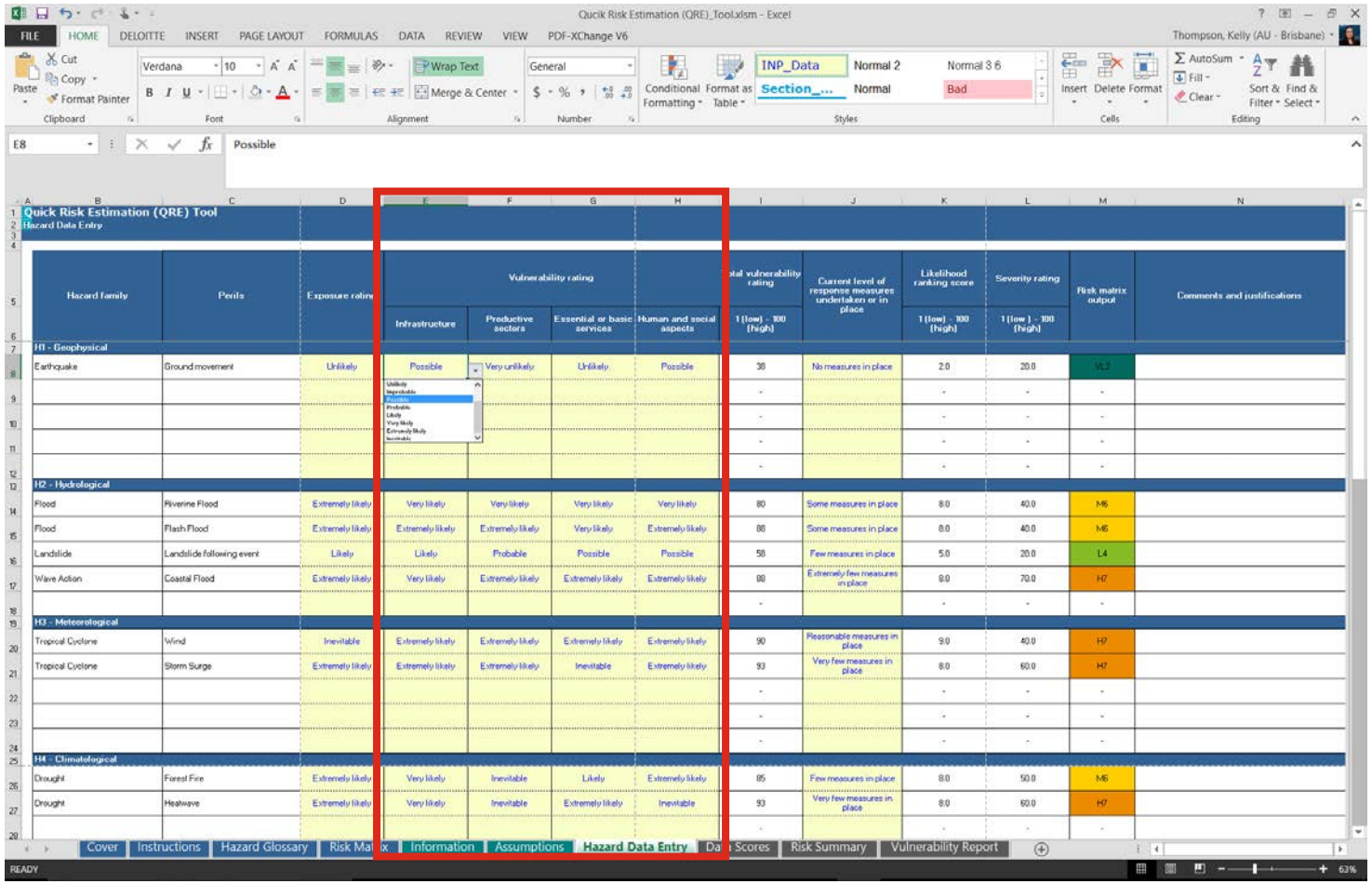
Assess vulnerability

© 2017 Deloitte Touche Tohmatsu. All rights reserved.

Step 6

Refer to Column E - H in the 'Hazard Data Entry' tab.

- For each selected peril, assess and score the vulnerability in each of the four categories - Infrastructure, Productive sectors, Essential or basic services and Human and social aspects using values from Unlikely to Inevitable.
- Record your justification for each evaluation score in Column N. This will enable validation as well as future revisions and tracking progress.



© 2017 Deloitte Touche Tohmatsu. All rights reserved.

Step 7

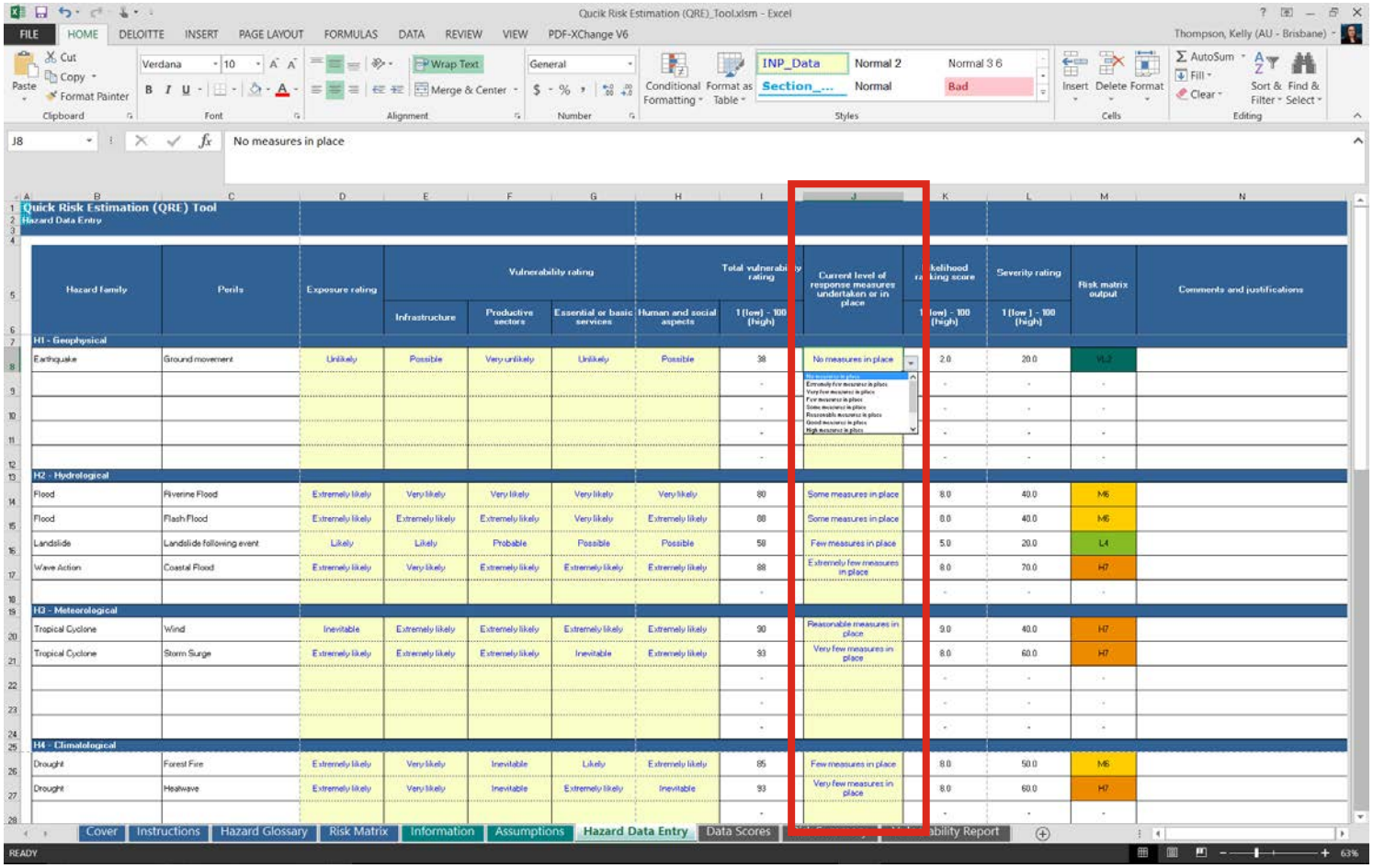
Assess the level of current actions or measures undertaken

© 2017 Deloitte Touche Tohmatsu. All rights reserved.

Step 7

Refer to Column J in the 'Hazard Data Entry' tab.

- For each selected peril, assess and score the level of current actions and measures in place to address and mitigate the peril in the location being assessed using values from "No measures in place" to "Complete control of disaster".
- Record your justification for each evaluation score in Column N. This will enable validation as well as future revisions and tracking progress.



© 2017 Deloitte Touche Tohmatsu. All rights reserved.

Step 8

Analyse results and Report

© 2017 Deloitte Touche Tohmatsu. All rights reserved.

Step 8

Refer to Columns K, L and M in the 'Hazard Data Entry' tab.

- Based on your assessment across steps 5 to 7, the QRE tool will auto-populate two final numerical values: A Likelihood Ranking Score and Severity Rating; and, identify the Risk Rating for the Hazard based upon the ratings identified in the *'Risk Matrix'* tab.

a) **Likelihood ranking score**: refers to the likelihood of the event occurring in comparison to the other assessed events in the specified location, based on the location's exposure and vulnerability to that event, and the current actions and measures undertaken. The lower the ranking score the lower the potential requirement for action. The higher the ranking score the higher potential requirement for action. Please note this score is not a statistical measure of probability but a ranking score to enable prioritisation of hazards/perils across all assessed hazards/perils.

b) **Severity rating**: refers to the impact and consequence level that a hazard would have on the location under study and its community, ranging from 1 to 100, being 1 the lowest severity and 100 the highest.

c) **Risk Rating**: refers to the allocation of a risk rating ranging from Very Low to Catastrophic aligned to the '*Risk Matrix'*, which is dependent upon the likelihood ranking and severity rating calculated.

Current level of response measures undertaken or in place	Likelihood ranking score	Severity rating	Risk matrix output	Comments and justifications
	1 (low) - 10 (high)	1 (low) - 100 (high)		
	-	-	-	
	-	-	-	

© 2017 Deloitte Touche Tohmatsu. All rights reserved.

Reporting

- A data overview per each hazard sub-family will be auto-populated in the 'Data Scores' tab to allow individualised analysis of results. This tab includes a summary of the criteria scores obtained as a result of the assessment that will be unlocked for the user to use as required.

- The QRE Tool also provides two combined Reports in two consecutive tabs: Risk Summary and Vulnerability Report.
  a) The **Risk Summary** maps the Disaster Likelihood and Severity in the first table compared against all hazards/perils assessed. The second table maps the Disaster Exposure and Vulnerability compared against all hazards/perils assessed.
  b) The **Vulnerability Report** maps the four Vulnerability Categories exposure and vulnerability ratings individually.
  These Reports provide a visual representation or 'Dashboard' of the results of the assessment, assisting you in analysing the outcomes of your exercise and in developing potential current and future risk scenarios.

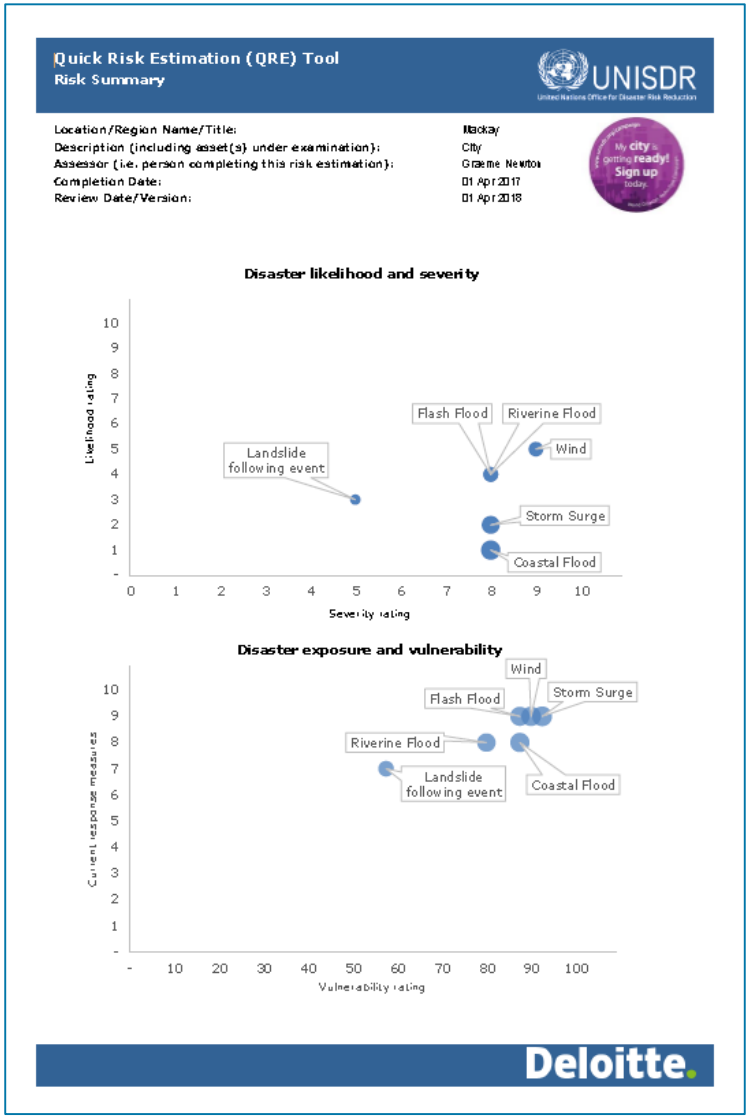
Quick Risk Estimation (QRE) Tool
Data Scores

Hazard family	Disaster	Peril	Exposure rating (1-10)	Infrastructure	Productive sectors	Essential or basic services	Human and social aspects	Total vulnerability rating (1-100)	Current response measures (1-10)	Likelihood ranking score (1-10)	Severity rating (1-100)
H1 - Geophysical	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
H2 - Hydrological	Flood	Riverine Flood	9	8	8	8	8	80	4	8	40.0
	Flood	Flash Flood	9	9	9	8	9	88	4	8	40.0
	Landslide	Landslide following event	7	7	6	5	5	58	3	5	20.0
	Wave Action	Coastal Flood	9	8	9	9	9	88	1	8	70.0
	-	-	-	-	-	-	-	-	-	-	-
H3 - Meteorological	Tropical Cyclone	Wind	10	9	9	9	9	90	5	9	40.0
	Tropical Cyclone	Storm Surge	9	9	9	10	9	93	2	8	60.0
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
H4 - Climatological	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
H5 -Biological	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
H6 - Extraterrestrial	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
H7 - Anthropogenic	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
H8 - Other (To be completed by User)	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-

© 2017 Deloitte Touche Tohmatsu. All rights reserved.

Final Reports

Risk Summary and Vulnerability Report



Quick Risk Estimation (QRE) Tool
Risk Summary

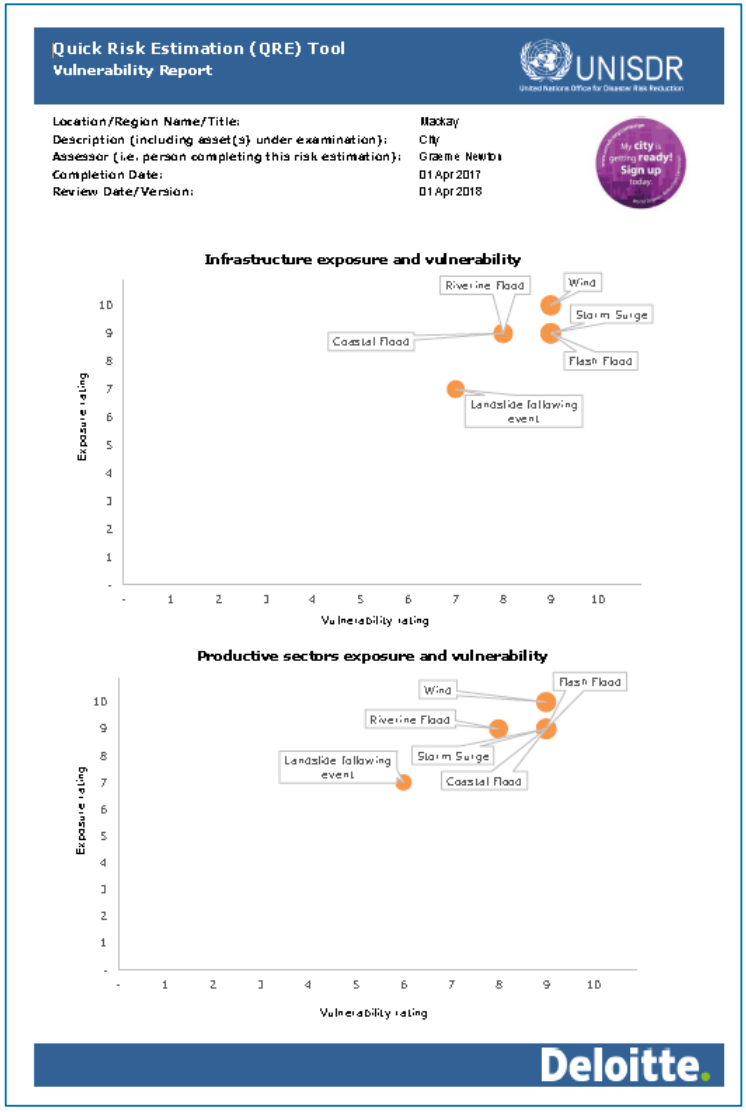
UNISDR
United Nations Office for Disaster Risk Reduction

Location/Region Name/Title:	Mackay
Description (including asset(s) under examination):	City
Assessor (i.e. person completing this risk estimation):	Graeme Newton
Completion Date:	01 Apr 2017
Review Date/Version:	01 Apr 2018

Disaster likelihood and severity

Disaster exposure and vulnerability

Deloitte.



Quick Risk Estimation (QRE) Tool
Vulnerability Report

UNISDR
United Nations Office for Disaster Risk Reduction

Location/Region Name/Title:	Mackay
Description (including asset(s) under examination):	City
Assessor (i.e. person completing this risk estimation):	Graeme Newton
Completion Date:	01 Apr 2017
Review Date/Version:	01 Apr 2018

Infrastructure exposure and vulnerability

Productive sectors exposure and vulnerability

Deloitte.

© 2017 Deloitte Touche Tohmatsu. All rights reserved.