Climate change & implications for immigration

James Renwick

Victoria University of Wellington

james.renwick@vuw.ac.nz



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ipcc INTERGOVERNMENTAL PANEL ON climate change WMO UNEP

VICTORIA UNIVERSITY OF WELLINGTON TE HERENGA WAKA

Who am I?

- A climate scientist
  - Atmospheric physicist
  - 20 years involvement in the IPCC
    - I know a lot about how the climate system is changing
- No expertise in demographics or migration
- My concern is how climate change will affect habitability & displacement/migration

- ➔ Will report on climate changes & impacts
  - And IPCC-based information on migration



[Credit: Yoda Adaman | Unsplash]

"It is indisputable that human activities are causing climate change, making extreme climate events, including heat waves, heavy rainfall, and droughts, more frequent and severe.

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HM Government

Global biodiversity loss, ecosystem collapse and national security

A national security assessment

Key judgements

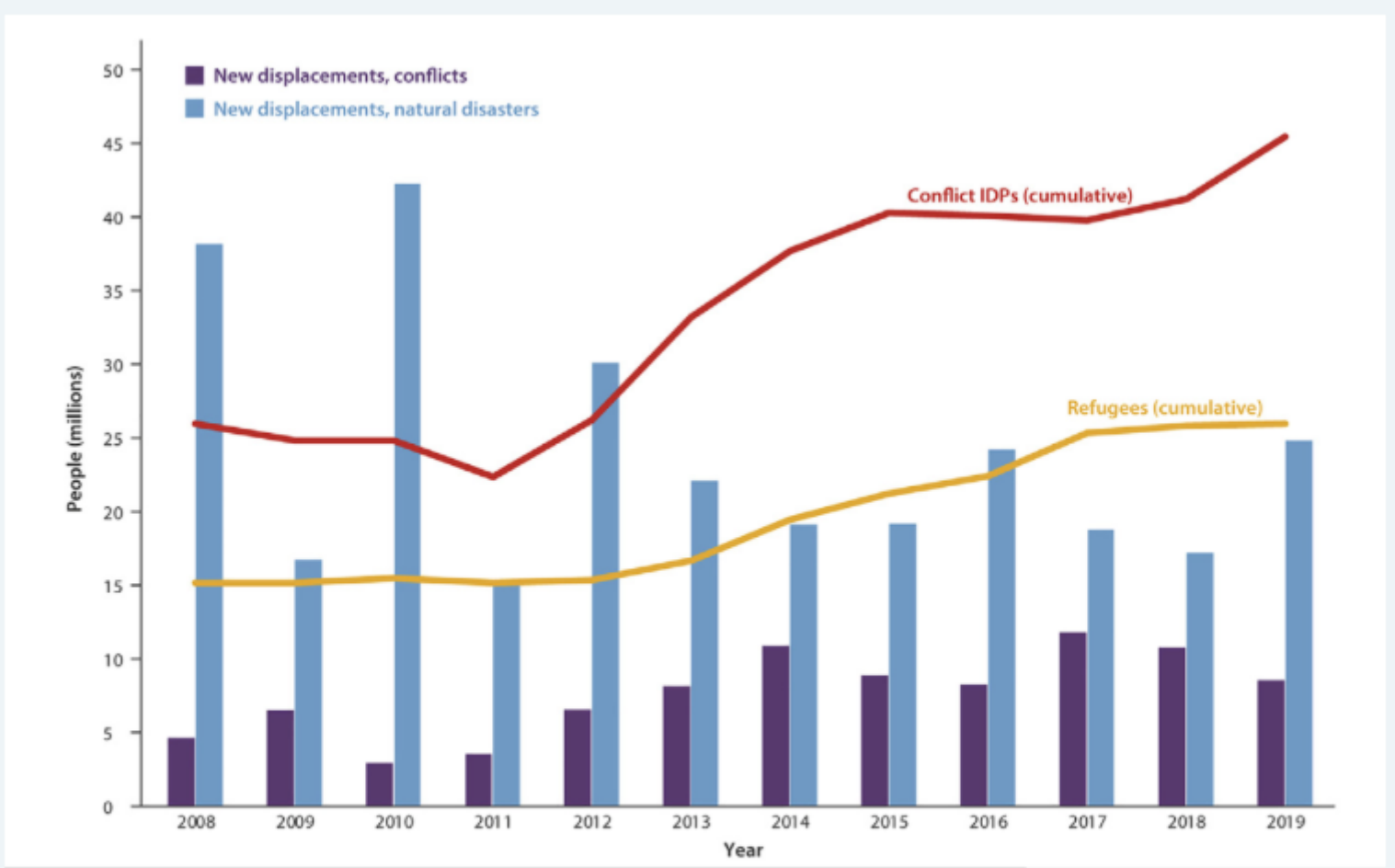
	Analytical Confidence Rating (AnCR)
1. **Global ecosystem degradation and collapse threaten UK national security and prosperity.** The world is already experiencing impacts including crop failures, intensified natural disasters and infectious disease outbreaks. Threats will increase with degradation and intensify with collapse. Without major intervention to reverse the current trend, this is highly likely to continue to 2050 and beyond.	**High**
2. **Cascading risks of ecosystem degradation are likely to include geopolitical instability, economic insecurity, conflict, migration and increased inter-state competition for resources.**	**Moderate**
3. **Critical ecosystems that support major global food production areas and impact global climate, water and weather cycles are the most important for UK national security.** Severe degradation or collapse of these would highly likely result in water insecurity, severely reduced crop yields, a global reduction in arable land, fisheries collapse, changes to global weather patterns, release of trapped carbon exacerbating climate change, novel zoonotic diseases and loss of pharmaceutical resources. The Amazon rainforest, Congo rainforest, boreal forests, the Himalayas and South East Asia's coral reefs and mangroves are particularly significant for the UK.	**High**
4. **Ecosystem degradation is occurring across all regions. Every critical ecosystem is on a pathway to collapse** (irreversible loss of function beyond repair).	**High**

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https://assets.publishing.service.gov.uk/media/696e0eae719d837d69afc7de/National_security_assessment_-_global_biodiversity_loss__ecosystem_collapse_and_national_security.pdf

Displacement & migration

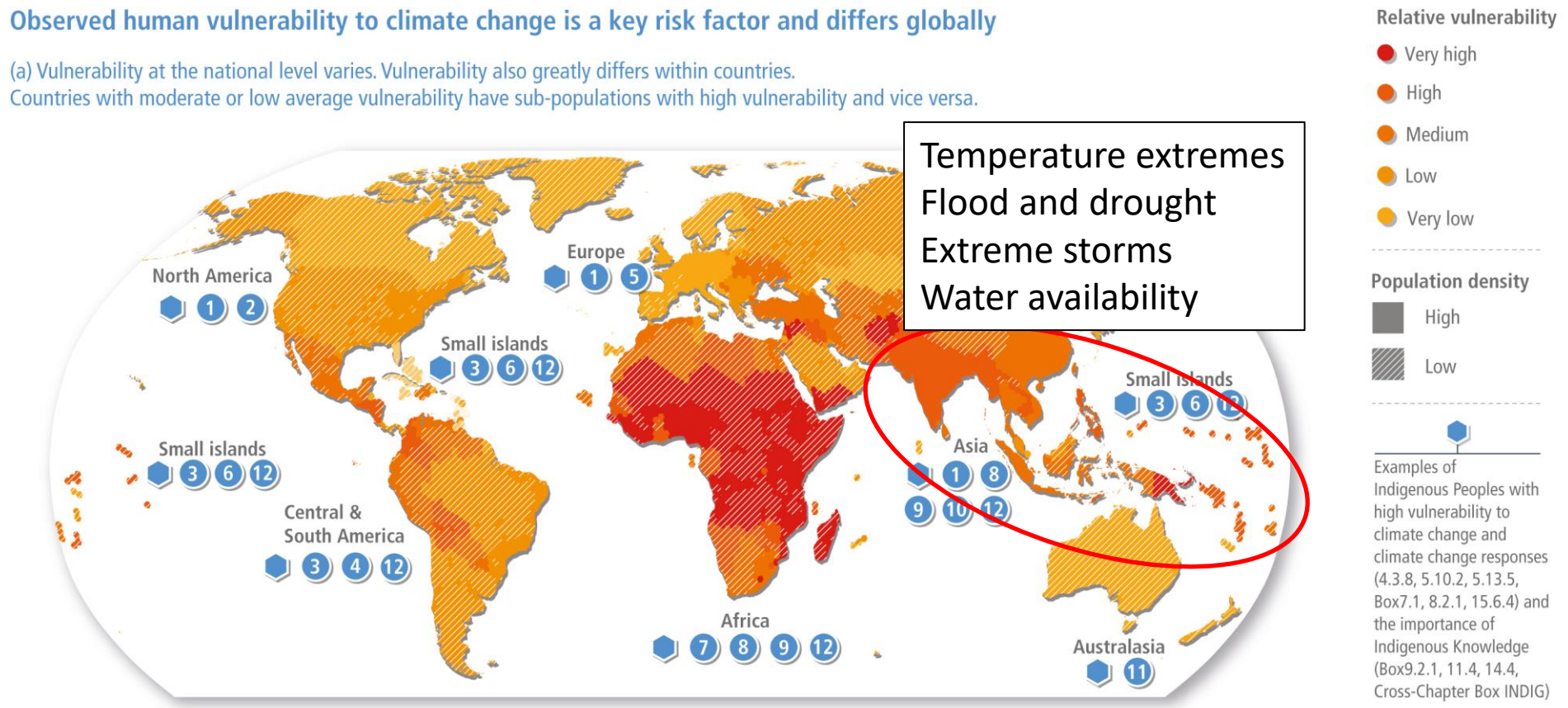
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Global rates of disaster- and conflict-induced displacement and stocks of global refugees and internally displaced people (IDP) between 2008 and 2019 (data: International Displacement Monitoring Centre). For the future, the World Bank projects a strong rise in climate-related migration: more than 140 million people could potentially be directly displaced by climate change impacts by 2030 within their own countries. (Adger et al. 2020, p.367)

https://science4sustainability.wordpress.com/2020/11/09/people-on-the-move-migration-as-an-adaptation-to-climate-change/

Regional vulnerability



IPCC AR6 WG2 Figure 7.2

How many head our way?

How does this affect Aotearoa - and how does it affect (im)migration here?

- We are seeing climate changes, as others are
  - A little less extreme than many other countries
  - We appear to be an “oasis” for those elsewhere
- Our Pacific neighbours will need support
  - Sea level rise, water availability, food security
    - Tens-hundreds of thousands looking our way?
- South Asian populations face many hazards
  - Hundreds of millions displaced this century?
    - A small fraction eyeing NZ?
- Very hard to estimate numbers affected

- Many people could be looking to us…

Possible Futures

- Best case:
  - World community caps warming at under 2°C
  - Major ice sheets stabilise, 0.5m sea level rise by 2100
  - A few thousand migrants come to our shores?

- Worst case:
  - No global action, 3°C warming by 2100
  - Ice sheets start to go, 2m sea level rise by 2100
  - Extremes become unbearable
  - Millions want in to Aotearoa?

How Do We Respond?

- We need to be ready for a worst-case outcome
  - Political, legal, military responses?
  - National infrastructure issues?
    - With a doubling or tripling of our population
  - Moral obligations?
- We need to be talking about this
  - The future will look very different to the past
  - How best does New Zealand ensure resilience?

Thank you