

Systematic analysis of Australia's and the Pacific Islands' regional geopolitical interactions: security and health in the context of climate change

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Introduction

Climate change is an unparalleled worldwide threat to human health and security. These effects force military organisations to reevaluate the operational requirement through comprehensive strategic planning that is informed by national policy. There are few comprehensive assessments of the interactions between the recognised concerns to human health and the expanding challenges to both national and international geopolitical security linked to a changing climate. The lack of data for institutions developing strategic planning and policy formulation in Australia and the Pacific means institutions are exposed to rising risk as they respond to the complex and quickly worsening implications of climate change.

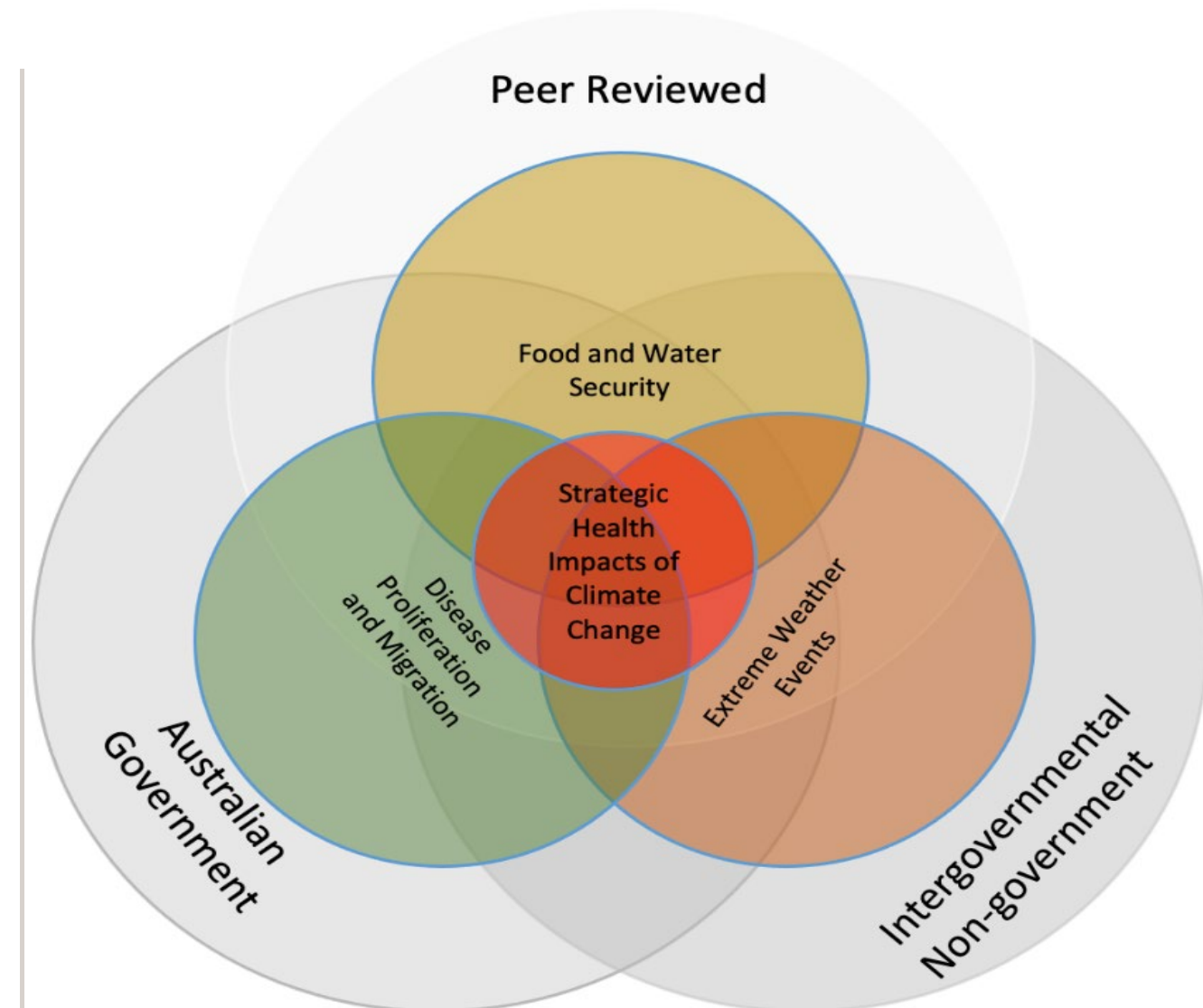


Figure 1: Key areas of health impact within material source types

Method

We undertook a systematic analysis peer-reviewed and grey literature from 2000 to 2020, with special focus on health and transdisciplinary topics related to climate change that were pertinent to the national strategic policy environment in the Western Pacific region (including Australia). Material with direct and indirect health effects of climate change that are strategically important for military operations was the focus of the selection criteria. Strict a priori protocols were followed during the material selection and review process to guarantee the validity of the results.

We then undertook a thematic analysis allowed an additional layer of interpretation based on the salient narratives, regardless of the material type or organisational source. Once coded, initial thematic analysis of the overall body of literature demonstrated salient trends across and between source type, climate health impact areas, and strategic domains, thereby validating comparison of the respective domains associated with the 'strategic health impacts of climate change'.



Figure 2A - Bibliometric material production by source 2005 - 2020

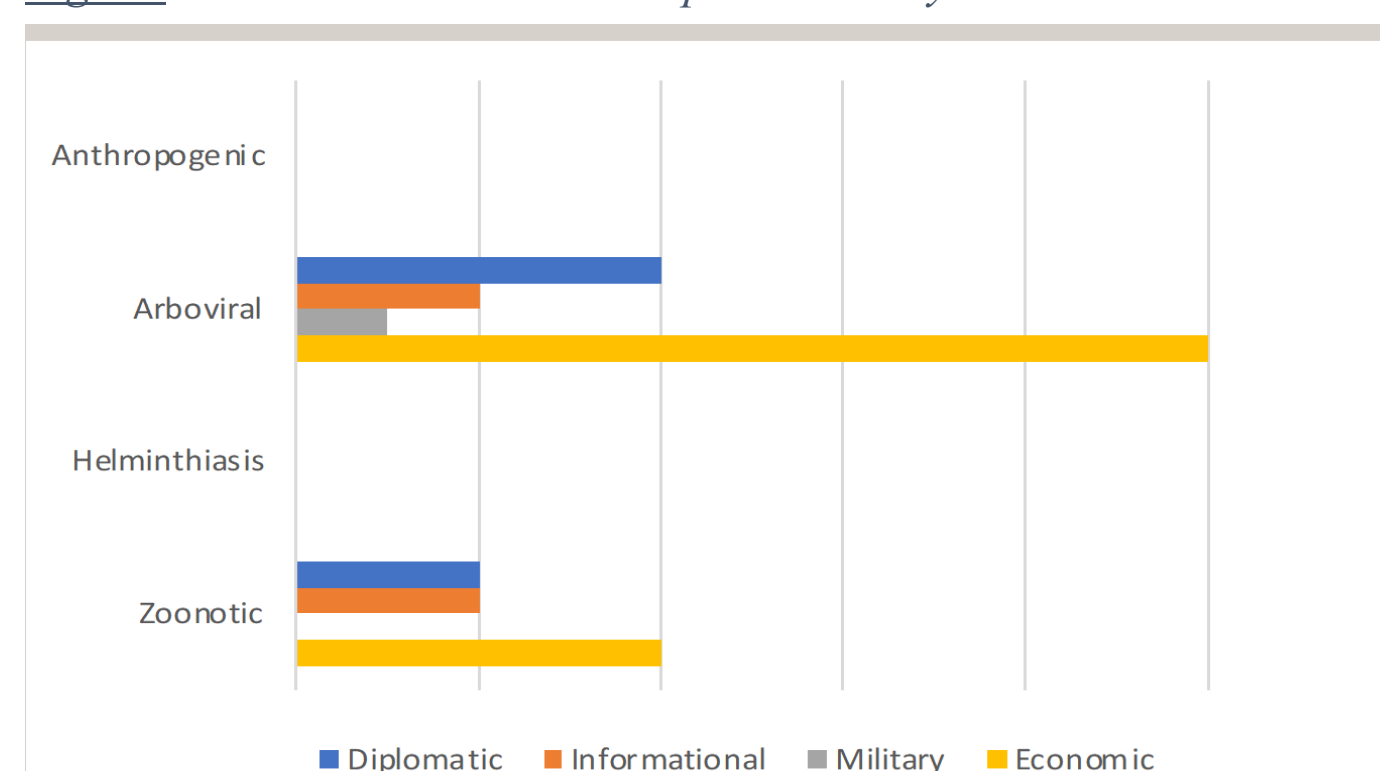


Figure 2C - Disease proliferation and migration health impact types

Figure 2: A: Peer-reviewed and IO/NGO results demonstrated parallel growing emphasis between academic research and Intergovernmental, Non-governmental, and independent organisations
 B: health impacts resulting from increasingly urbanised population are mentioned consistently in material
 C: Analysis of climate-related disease migration types demonstrate where arboviral and zoonotic vectors are the focus
 D: There is a dominant economic focus across all impact types, with the exception of storm / surge

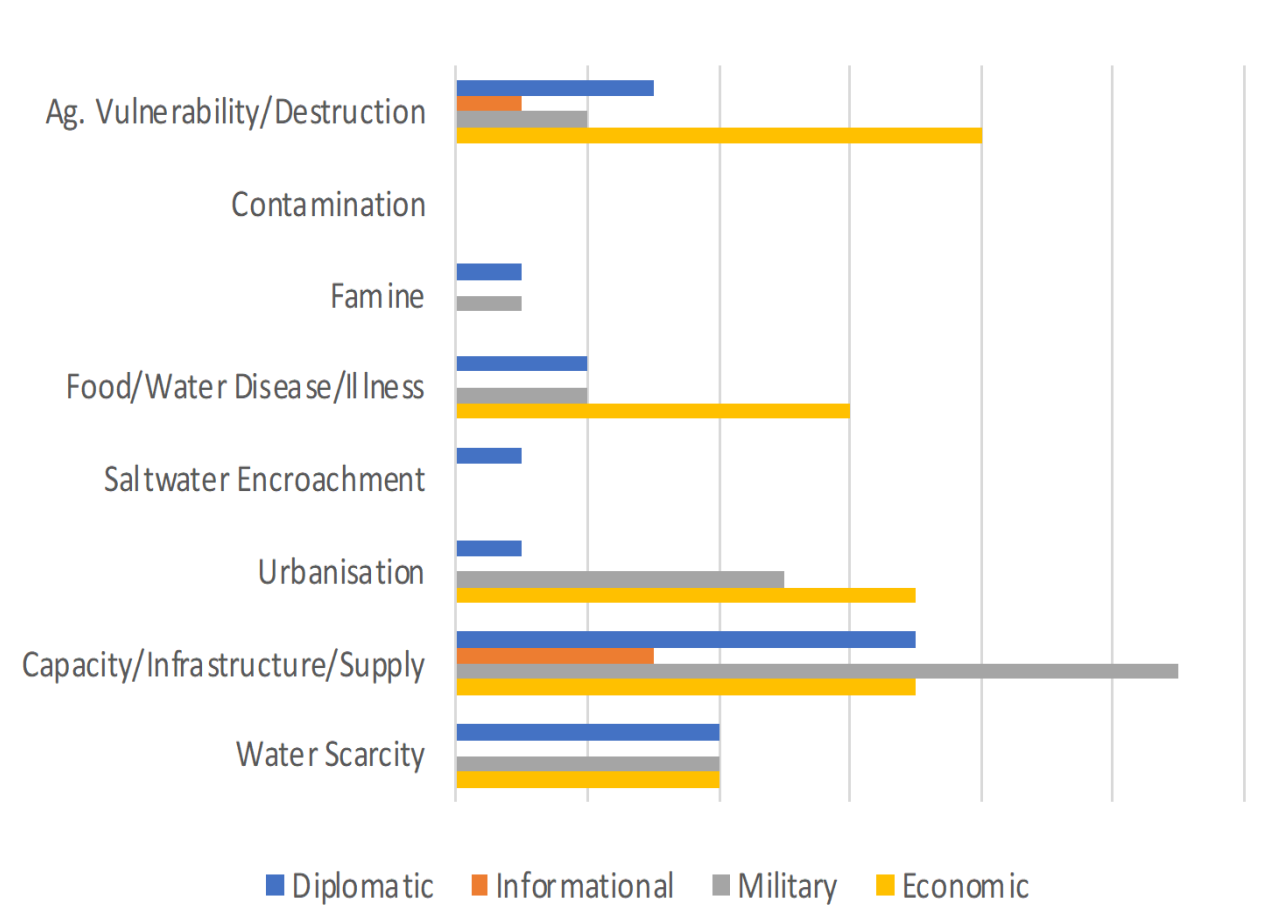


Figure 2B - Food and water security impact type by DIME.

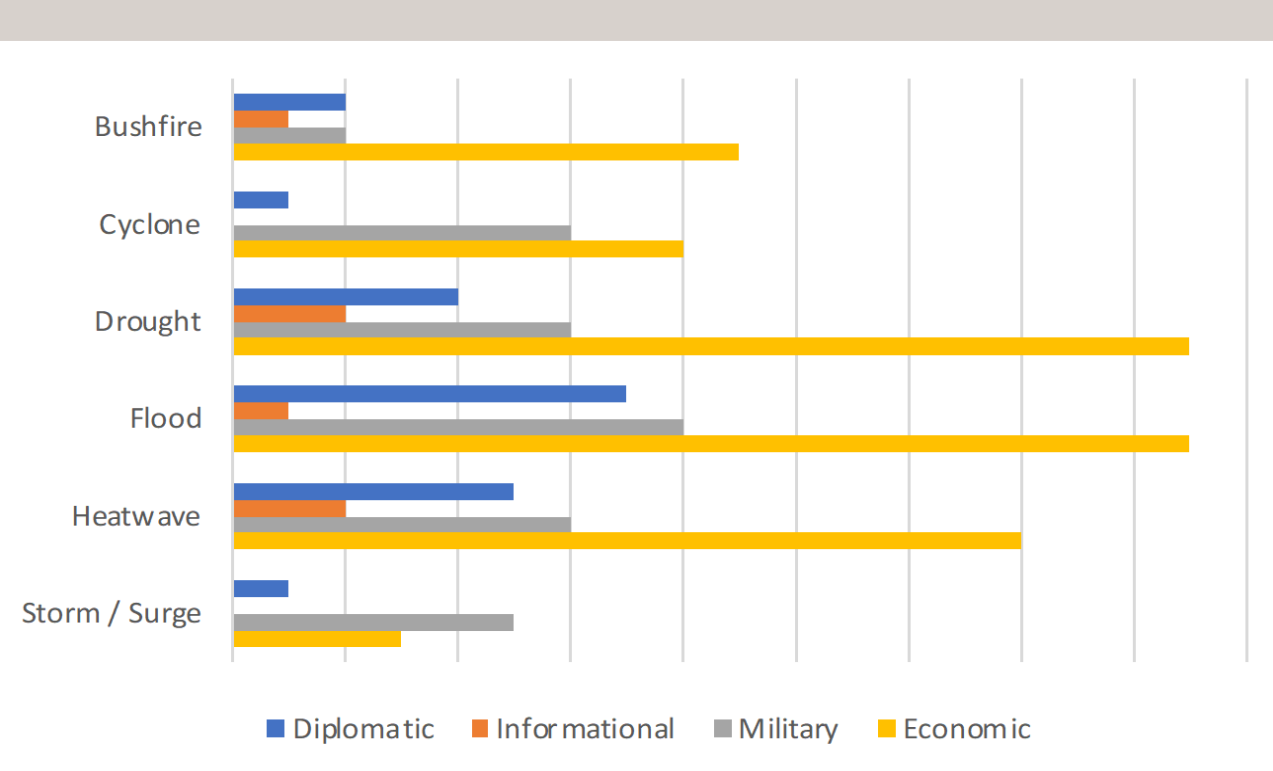


Figure 2D - Extreme weather event impact type by DIME.

Results

Peer-reviewed, intergovernmental/NGO and governmental data was accessed

The study pinpoints the crucial areas where intersection the health and climate change impacts operations, personnel, and strategic capability. The transdisciplinary nature of climate-related health risks is exemplified by key findings that show how they can manifest as discrete acute or chronic phenomena, or as primary, secondary, and tertiary impacts following extreme weather events linked to climate change.

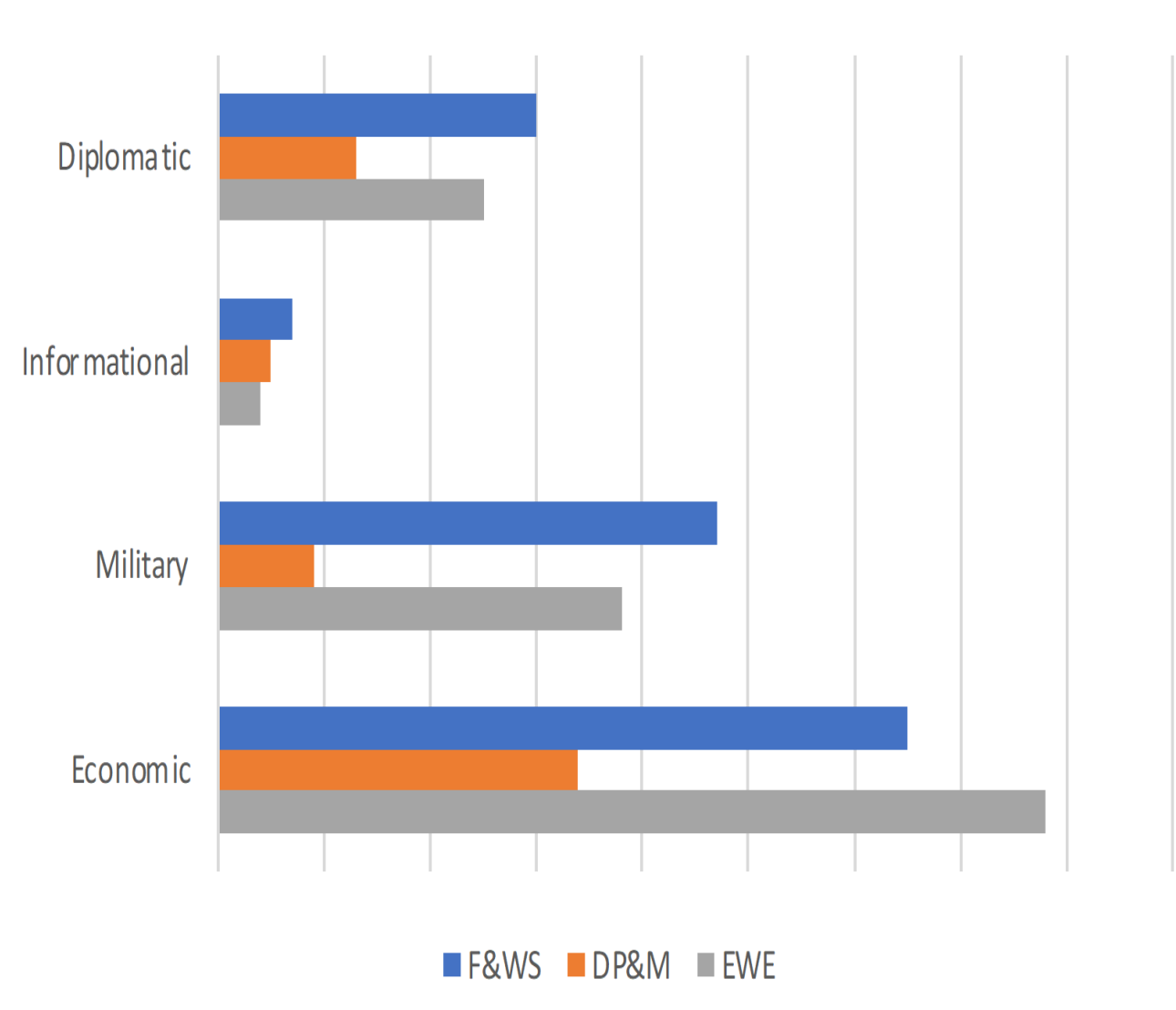


Figure 3 - DIME by climate health impact type (food and water security (F&WS), disease proliferation and migration (DP&M) and extreme weather events (EWE))

Thematic coding was used to expand themes across the disparate material types incorporated through the systematic literature review

These risks range from migration and disease proliferation to food and water security. It was shown that military organisations were more inclined to react to severe weather as opposed to other environmental events. The current review highlights the tendency for an economic focus within policy and planning material, especially within the Australian Government. This trend does not translate to strategic imperatives or provide a strong policy basis for strategic planning through which military organisations may plan for future demands operational demands, or personnel risks.

Conclusions

The effects of climate change on health have the potential to seriously jeopardise population health and raise the need for countries in the region to take strategic action. A limited range of factors was found to help researchers identify high-risk areas based on population impact, frequency, or impact magnitude. Based on past response patterns, results of this kind can be used to forecast future demand on organisations in the region.

Thematic analysis offers a valuable tool for qualitative analysis fields and material types. Climate-related strategic health impacts must also be viewed in the context of a 'complex of effects', which in turn must be staged against a backdrop of competing priorities, across the full spectrum of strategic domains. Therefore, demonstrating salient risks, beyond the current economic focus, across the less tangible risks types, would prove valuable to future response and decision making for strategic resource expenditure.

Acknowledgements

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