

THE CLIMATE CRISIS: DEFENCE READINESS AND RESPONSIBILITIES

November 2018



"The impacts of climate change are being felt acutely in the Pacific as well as in New Zealand itself. This will necessitate more HADR and stability operations in our region... New Zealand may be faced with concurrent operational commitments, which could stretch resources and reduce readiness for other requirements."

Strategic Defence Policy Statement 2018

In coming decades, the impacts of climate change will continue to test the security and resilience of our community, our nation and the world, including the South Pacific region. Some of the largest temperature changes will occur between New Zealand and the equator, and the risk of concurrent and more intense extreme weather events is increasing.

Climate change in the South Pacific and Antarctica

At the 2018 Pacific Islands Forum, leaders affirmed that "climate change presents the single greatest threat to the livelihood, security and wellbeing of Pacific people." The current effects of climate change in the region, let alone the future intensity increase, demonstrate the salience of this declaration.

Climate science also supports this statement—the October 2018 report of the Intergovernmental Panel on Climate Change (IPCC) notes that without "unprecedented" changes to energy systems, land management and transportation, global warming is likely to reach 1.5°C above pre-industrial levels between 2030 and 2052. The implications of the world warming to this 1.5°C mark are grave, but considerably less severe than if warming above pre-industrial levels reaches 2°C or 3°C—a real possibility without ambitious global action for change.

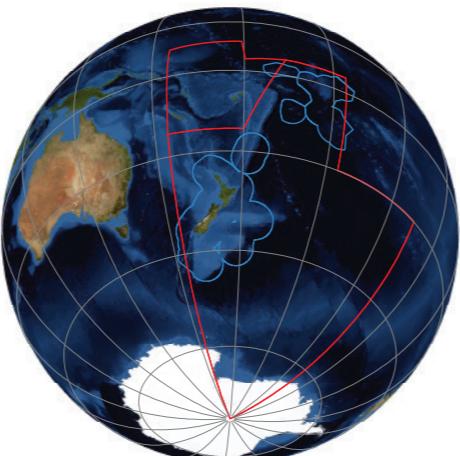
Pacific Island countries are disproportionately affected, even though they only account for approximately 0.04 per cent of global greenhouse gas emissions. The region is facing dramatic climate effects stemming from rising temperatures, including sea level rise, increased frequency and intensity of extreme weather events such as tropical cyclones and storm surges, changing rainfall patterns and prolonged droughts. The implications of these effects include a range of environmental impacts, such as coral bleaching, decreasing fish stocks and increased soil salinisation—all of which have flow-on economic, cultural and social consequences.

For some Pacific Island countries, the threats posed by climate change are extreme. Across the Pacific, at least eight low-lying islands have already been immersed by rising sea levels. The western Pacific Ocean is rising at about three times the global average rate of around three millimetres annually. Islands not fully immersed still face a range of challenges including infrastructure damage and

degradation, and unproductive land, challenging the water and food security of communities.

The Pacific Ocean is warming and increasing in acidity, while surface waters of the Southern Ocean have warmed and become less saline. This is degrading aquatic ecosystems, affecting fish stocks. When combined with over-fishing, changing fish migration patterns will see more vessels fishing in new areas including international waters and waters in New Zealand's expansive search and rescue area.

There is strong evidence that climate change has already had an impact on Antarctica. Ice melt is increasing, and NZDF personnel have observed the thinning and retreating of ice on the continent in recent decades. Research published in December 2017 indicates the possibility of more warming of the continent, noting that increased El Niño conditions in the tropical Pacific may bring warming to western portions of East Antarctica. Enhanced warming of Antarctica over time will contribute to sea level rise, further increasing risks for coastal communities in the Pacific.



New Zealand Search and Rescue Region, including areas where New Zealand is often called upon to assist
Economic Zone of New Zealand Territories and Associated States

- Climate change will exacerbate water shortages, food insecurity, and impact public health—further challenging areas with limited resources or weak governance.
- The effects of climate change will challenge the preparedness level of Defence in terms of responding to events in our region.
- Understanding and accounting for the security impacts of climate change will be a critical component of operational planning in the years to come.

How does security intersect with Climate Change?

The links between climate change and security are indirect but demonstrable. When the effects of climate change intersect with a complex array of environmental and social issues, it can be an important contributor to both low-level and more violent conflict. The security implications of climate change are further magnified in areas dealing with weak governance or corruption. The ways climate change is affecting the Pacific region, and the pace and magnitude of the impacts, have led leaders in the region to consider climate change as a threat in its own right.

Globally, climate change is most acutely affecting states less equipped to respond at pace, including in the Pacific region. Pacific communities hold important local and indigenous knowledge that can enable climate change mitigation and adaptation, which works to increase local resilience.

The persistent nature of climate change and the flow on social, economic and health implications of increasingly intense environmental changes is, however, challenging communities across the region. Reducing arable land and depleting fresh water supplies are adversely affecting community health. The impacts can cause added stress to communities in post-conflict environments.

Climate migration has already caused some community-level conflict within the Pacific. Across the region, there have been instances of communities being split up for relocation, some being moved to areas

with different cultures without prior consultation with the host communities, and others being moved into already crowded areas. In such cases, there have been reports of low-level conflict over land—sometimes deadly—and reports of increased violence against women and children. When not well managed, climate migration has the potential to heighten security concerns.

A pressing security challenge for New Zealand will be managing the politics of climate change. Globally, disagreements in relation to climate change—such as in relation to the Paris Agreement—could influence broader relationships between states as well as affecting collective responses. Some states could look to use assistance in climate change disaster adaptation, mitigation, response, and recovery as a way to increase influence and access.

Security impacts of climate change

Climate effects

- Rising temperatures
- Melting ice
- Sea level rise
- Ocean acidification
- Intensifying cyclones
- More or less rainfall
- Floods / Droughts
- Heatwaves

Environmental impacts

- Coral bleaching
- Decreasing fish stocks and marine life
- Coastal erosion
- Increase in soil salinity
- Unproductive land (non cultivable and eventually uninhabitable land)

Social impacts*

- Loss of livelihood
- Water and food scarcity
- Increase in malnutrition
- Loss of jobs / education opportunities
- Loss of cultural identity
- Damage to community infrastructure
- Climate migration

Security implications

- Human security challenges
- Health-related crises
- Resource competition (food and water security)
- Violence from mismanaged adaptation or migration
- Land disputes

Magnified by weak governance

The impacts of climate change will become more pronounced as time goes on

*Social Impacts are often interconnected with economic and political factors



Recommendations for New Zealand Defence

The impacts of climate change will have enduring implications for New Zealand Defence and close partners, especially in the Pacific.

These high-level recommendations sit in the context of ongoing work around capability and affordability, and will be followed by a joint Ministry of Defence and New Zealand Defence Force implementation plan in 2019:

- Defence should conduct planning for increasingly concurrent operational requirements in the South Pacific due to the impacts of climate change.
- Defence should consider how it could increase its work alongside other New Zealand and international agencies to support the efforts of South Pacific partners to adapt and build resilience against the impacts of climate change.
- Defence should work towards gaining a better understanding of South Pacific counterparts' concerns around climate change and how it is playing out now and into the future both in their security sectors and in their broader societies.
- Defence should seek to elevate international discussion on the security impacts of climate change, including with foreign partners in bilateral defence talks and regional forums to learn from others, to highlight the impacts on the South Pacific, and to emphasise the importance of improving resilience in the region.
- Defence should explore opportunities to support scientific research on climate change and security (or conflict) in the South Pacific and on how climate change will change the way the Defence Force should operate in the Southern Ocean and Antarctica.
- Fishing vessels will operate in new areas, including within New Zealand's expansive search and rescue area of responsibility in the coming years.

Key Implications for Defence

The effects of climate change are challenging countries and regions in different ways:

- Militaries will be stretched with a growing number of tasks in response to climate-induced impacts globally.
- More HADR and stability operations in New Zealand's region will be required.
- The increased frequency and intensity of extreme weather events such as storm surges, and increased intensity of tropical cyclones combined will shorten recovery periods.
- Fishing vessels will operate in new areas, including within New Zealand's expansive search and rescue area of responsibility in the coming years.

The Defence Force has an opportunity to be an environmentally aware agency doing its part in efforts to curb the impacts of climate change.

- The Defence Force should invest more in research relating to science and technological developments around "green" or more sustainable military technology, particularly in relation to different types of fuels, energy storage and renewable energy.
- Defence should seek lessons learned from like-minded and close foreign partners on integrating climate change planning and environmental security as a business as usual activity.
- The Defence Force should work with international partners to implement best practices on operations to mitigate environmental impacts that could affect local communities.
- Defence should look into options for being more sustainable on base in New Zealand that could be swiftly implemented as well as more ambitious options to be considered in future.
- Noting the development of the Zero Carbon Bill in New Zealand: Defence should explore the addition of an environment and sustainability consideration in procurement and capability planning processes; The Defence Force should continue working towards implementation of its Energy Policy, which promotes further exploration of opportunities around sustainability and following the Government's direction for transparency, the Defence Force should investigate how it could work towards reporting on its carbon emissions.

Wider Policy context

Expanded concept of security, with human and environmental security

