



New Zealand
**MINISTRY
OF DEFENCE**
Manatū Kaupapa Waonga



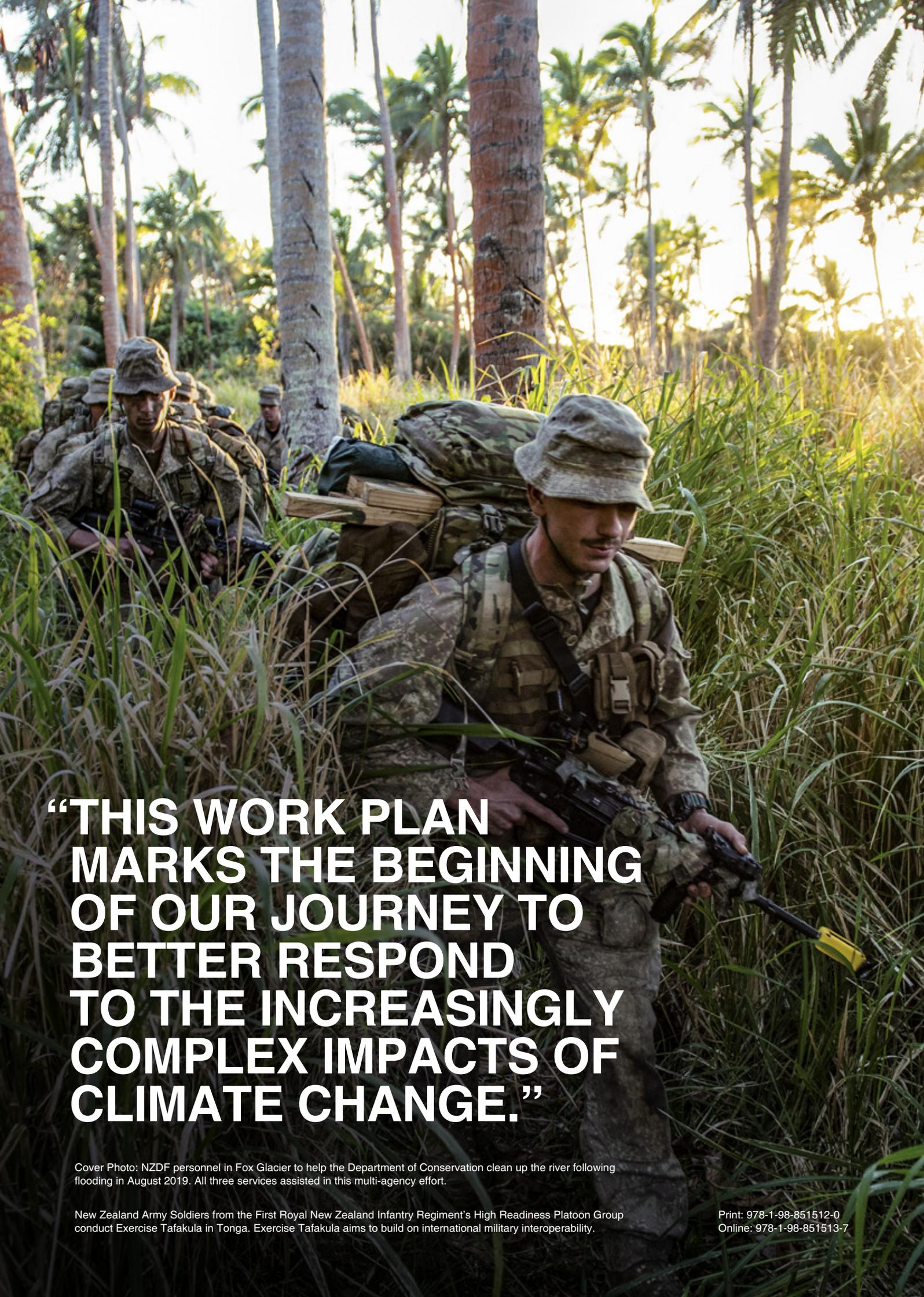
New Zealand
**DEFENCE
FORCE**
Te Ope Kaitua O Aotearoa

RESPONDING TO THE CLIMATE CRISIS

AN IMPLEMENTATION PLAN

November 2019

New Zealand Government



**“THIS WORK PLAN
MARKS THE BEGINNING
OF OUR JOURNEY TO
BETTER RESPOND
TO THE INCREASINGLY
COMPLEX IMPACTS OF
CLIMATE CHANGE.”**

Cover Photo: NZDF personnel in Fox Glacier to help the Department of Conservation clean up the river following flooding in August 2019. All three services assisted in this multi-agency effort.

New Zealand Army Soldiers from the First Royal New Zealand Infantry Regiment's High Readiness Platoon Group conduct Exercise Tafakula in Tonga. Exercise Tafakula aims to build on international military interoperability.

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Responding to the climate crisis

New Zealand's *Strategic Defence Policy Statement 2018* recognised climate change for the first time as a major driver of military operations. The Policy Statement also explicitly recognises the important role Defence plays in promoting the overall wellbeing and resilience of New Zealand, its communities and environment. New Zealand Defence provides value to the Community, Nation, and World.

As outlined in the follow-on November 2018 New Zealand Defence Assessment, *The Climate Crisis: Defence Readiness and Responsibilities (The Climate Crisis)*, climate change will be one of the greatest global and regional security challenges in the coming decades. The New Zealand Defence Force and counterparts around the world will be called upon more frequently to respond.

In the 2018 Boe Declaration, Pacific Island leaders affirmed that climate change represents the single greatest threat to the livelihood, security and wellbeing of Pacific peoples. This statement was reaffirmed at the 2019 South Pacific Defence Ministers' Meeting and by leaders at the 2019 Pacific Islands Forum, alongside a commitment to progress the implementation of the Paris Agreement. The pace and magnitude of climate change impacts in the Pacific and more globally is resulting in a range of environmental and social consequences that, when magnified by governance and capability challenges, bring security implications.

In support of the wider New Zealand Government work programme on climate change, New Zealand Defence (which includes both the New Zealand Defence Force and the Ministry of Defence) has taken a proactive approach in promoting global recognition of climate change as a security risk and to integrate climate change into Defence activities and decision-making processes. Of particular note, the *Defence Capability Plan 2019* seeks to ensure New Zealand has greater Defence Force capacity and capability to undertake humanitarian assistance, search and rescue, and disaster relief operations.

Guided by the principle of *kaitiakitanga*, guardianship of the natural environment for future generations, New Zealand Defence is committed to playing its part in alleviating and minimising the security impacts of climate change in our Community, Nation and World. We are committed to supporting our Pacific partners, increasing our understanding of the security impacts of climate change, and being resilient and ready to respond in the face of a more complex operating environment and the concurrent operational requirements that climate change will bring.

This implementation work plan puts actions to the recommendations from *The Climate Crisis* Defence Assessment – sustainable changes at home demonstrate our commitment to identifying, addressing and minimising the impacts of climate change to our communities and international partners. It highlights Defence's current efforts and commitments relating to climate change and how we will grow best practice and raise our ambition over time. It identifies next steps Defence will take to ensure we are even more prepared for the challenges climate change will bring over the next decade.



ANDREW BRIDGMAN
Secretary of Defence



K.R. SHORT
Air Marshal
Chief of Defence Force

The intensifying impacts of climate change and implications for Defence

1. As described in the *Strategic Defence Policy Statement 2018*, New Zealand’s Defence policy settings have evolved to recognise a more complex international strategic environment, where climate change is a significant disrupter. Globally, climate change is exacerbating a range of human security challenges, including community violence, biosecurity¹ and health implications, and resource scarcity – notably around food and water shortages.

“When the effects of climate change intersect with a complex array of environmental and social issues, they can be a significant contributor to both low-level and more violent conflict.”

The Climate Crisis: Defence Readiness and Responsibilities 2018 – Paragraph 9

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

¹ The Ministry of Defence is progressing a new Defence Assessment on “Biodefence” which will examine Defence’s critical role supporting lead agencies across a range of biodefence activities, and how climate change in particular will exacerbate the transmission of biological hazards and threats. The assessment will be complete in early 2020.

2. Pacific Island countries are disproportionately affected by the impacts of climate change despite being some of the lowest emitters of greenhouse gases in the world. These impacts are changing the lives of Pacific communities. As highlighted in the 2018 Defence Assessment, *The Climate Crisis: Defence Readiness and Responsibilities* (*The Climate Crisis*), 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 are, however, challenging communities across the region.
3. As recognised in the 2019 Defence Assessment *Advancing Pacific Partnerships*, the Pacific region is also evolving, with increasing connectedness to the broader world bringing both opportunities and security challenges, including transnational crime, resource competition and a more contested strategic environment. These security challenges intersect with the implications of climate change in complex and compounding ways.
4. The impacts of climate change are accelerating. Data compiled by the World Meteorological Organization ahead of the September 2019 United Nations Climate Action Summit demonstrates that global temperatures have risen by 1.1 degrees Celsius between 1850–1990 and that the five-year period from 2015 to 2019 is the warmest on record. Heightened warming rates have caused a marked decline in the Antarctic and Greenland ice sheets, which will exacerbate future sea level rise.² This has been demonstrated in the September 2019 Intergovernmental Panel on Climate Change’s Special Report on *Oceans and the Cryosphere in a Changing Climate*.³
5. The costs associated with the intensifying impacts of climate change are also rising. Cost estimates of the damages that will be caused before the end of the century from warming vary from US\$54 trillion in damages with 1.5 degrees Celsius of warming to US\$69 trillion with 2 degrees Celsius of warming.⁴ Contributing factors include but are not limited to damage of critical infrastructure by extreme weather events, harm to human health, productivity, crops and tourism.⁵



Minister for Climate Change James Shaw and Minister of Defence Ron Mark launch the 2018 Defence Assessment, *The Climate Crisis: Defence Readiness and Responsibilities* in December 2018.

6. Future costs of operating in environments impacted by climate change will be unavoidable, and Defence recognises the need to adapt. With the intensifying impacts, militaries globally will be stretched by a growing number of tasks in response to climate-induced impacts. This includes:
 - More humanitarian assistance and disaster relief operations, particularly in New Zealand’s neighbourhood;
 - Shorter recovery periods for affected communities and responders alike, and more complex operational environments with the increased frequency and severity of extreme weather events such as storm surges, combined with the increased intensity of tropical cyclones; and
 - Changes to maritime operations due to the movement of fish stocks across the Pacific leading to fishing vessels operating in new areas, including within New Zealand’s expansive search and rescue area of responsibility.

² World Meteorological Organisation, *United in Science*, September 2019. https://public.wmo.int/en/resources/united_in_science

³ The September 2019 Intergovernmental Panel on Climate Change’s Special Report on Oceans and the Cryosphere (frozen areas of the earth) estimates that by 2100 there will be a global sea level rise of 43 centimetres even in a scenario where emissions are reduced enough to limit warming to 2°C. Read more at: <https://www.ipcc.ch/srocc/home/>

⁴ Intergovernmental Panel on Climate Change Special Report ‘Global Warming of 1.5°C’, page 264, October 2018.

⁵ Lafakis, Ratz, Fazio and Cosma, *The Economic Implications of Climate Change*, June 2019.

New Zealand Defence's response to the climate crisis

7. As outlined in the *Strategic Defence Policy Statement 2018*, the Government's highest priority for the Defence Force is its ability to operate and undertake tasks in New Zealand's territory (including its exclusive economic zone) and its neighbourhood, from the South Pole to the Equator. This includes humanitarian assistance and disaster relief operations in the face of increasingly severe and disruptive weather events, maritime surveillance and stability and peace support operations.
8. Preparing for and responding to the intensifying impacts of climate change are key components of this priority. Drawing from the recommendations contained in the 2018 *Climate Crisis Defence Assessment*, New Zealand Defence has developed a four pillar model: "Respond, Adapt, Mitigate and Engage" to capture the recommendations (see Annex 1) and advance Defence's work on climate change. This first implementation work plan sets out our direction towards being more sustainable and prepared for the challenges climate change will continue to bring.
9. Guided by the principle of *kaitiakitanga*, guardianship of the natural environment for future generations, seeking to protect *taonga* (treasures) and recognising the *mauri* (life force) of the environment, New Zealand Defence is committed to supporting our Pacific partners and to playing our part in identifying, alleviating and minimising the security impacts of climate change in our community, nation and the world. This work plan is a first step in consolidating our response and puts Defence on course to further adapt and prepare over the next decade.
10. This action-oriented plan focuses on Defence's response to the climate crisis in four key areas that encompass *The Climate Crisis* recommendations and outlines our strategic goals to 2030:





R E S P O N D

We are prepared to sustain multiple concurrent complex response operations

A D A P T

We are continuously adapting to operate effectively in an environment impacted by climate change

M I T I G A T E

We have reduced our impact on the climate and wider natural environment

E N G A G E

We are a trusted partner on climate change and security in the Pacific and internationally

- 11. This work plan marks the beginning of our journey to better respond to the increasingly complex impacts of climate change by outlining our current work commitments, including for the 2020 calendar year, and next steps we will undertake.
- 12. Future work activities will be supported by robust business cases and, where appropriate, development of science-based targets to ensure that we make ongoing progress towards our goals. These cases will be required at differing times over the coming decade as adaptation requirements become even clearer. Defence is committed to tracking our progress across these four areas, including by reviewing this plan in 2025.

NZDF personnel in Fox Glacier to help the Department of Conservation clean up the river following flooding in August 2019. All three services assisted in this multi-agency effort.

RESPOND

13. *The Climate Crisis* clearly articulates that climate change will increase the frequency and complexity of severe weather events requiring a Defence response, in addition to complicating a range of security challenges. Defence must be ready to conduct a range of operations at home and abroad in support of our partners, including: humanitarian assistance and disaster response operations; maritime patrols of New Zealand's and – when requested – partner's Exclusive Economic Zones; and responding to potential conflicts resulting from resource competition or disputes, including those exacerbated by climate change impacts.
14. We must be prepared to sustain multiple, concurrent and complex response operations as a result of climate change.

We are already committed to:

Enhancing capability and planning for sustaining concurrent complex operations

[*Climate Crisis Recommendation 1*]

15. The *Defence Capability Plan 2019* provides for enhanced Defence capabilities to deliver more frequent, complex, and concurrent operations. Defence is also undertaking planning to ensure the Defence Force is organisationally ready to sustain multiple and more complicated joint operations. This preparation is already occurring through Defence Planning Scenarios, the Defence Force's Strategic Plan and through Service and Joint Operational Plans.

Building partner capacity to help overall response capability

[*Climate Crisis Recommendation 2*]

16. New Zealand Defence has a strong history and ongoing practice of working with partner nations, particularly throughout the Pacific and South East Asia, to develop combined capabilities and shared expertise. These exchanges, postings, visits and training activities help ensure that multinational responses to events – such as humanitarian assistance and disaster relief operations – have strong head starts drawing on local expertise and are overall efficient and effective.

Next steps – 2021 onwards:

Ensure that limiting climate and environmental impact is included in all military operational planning

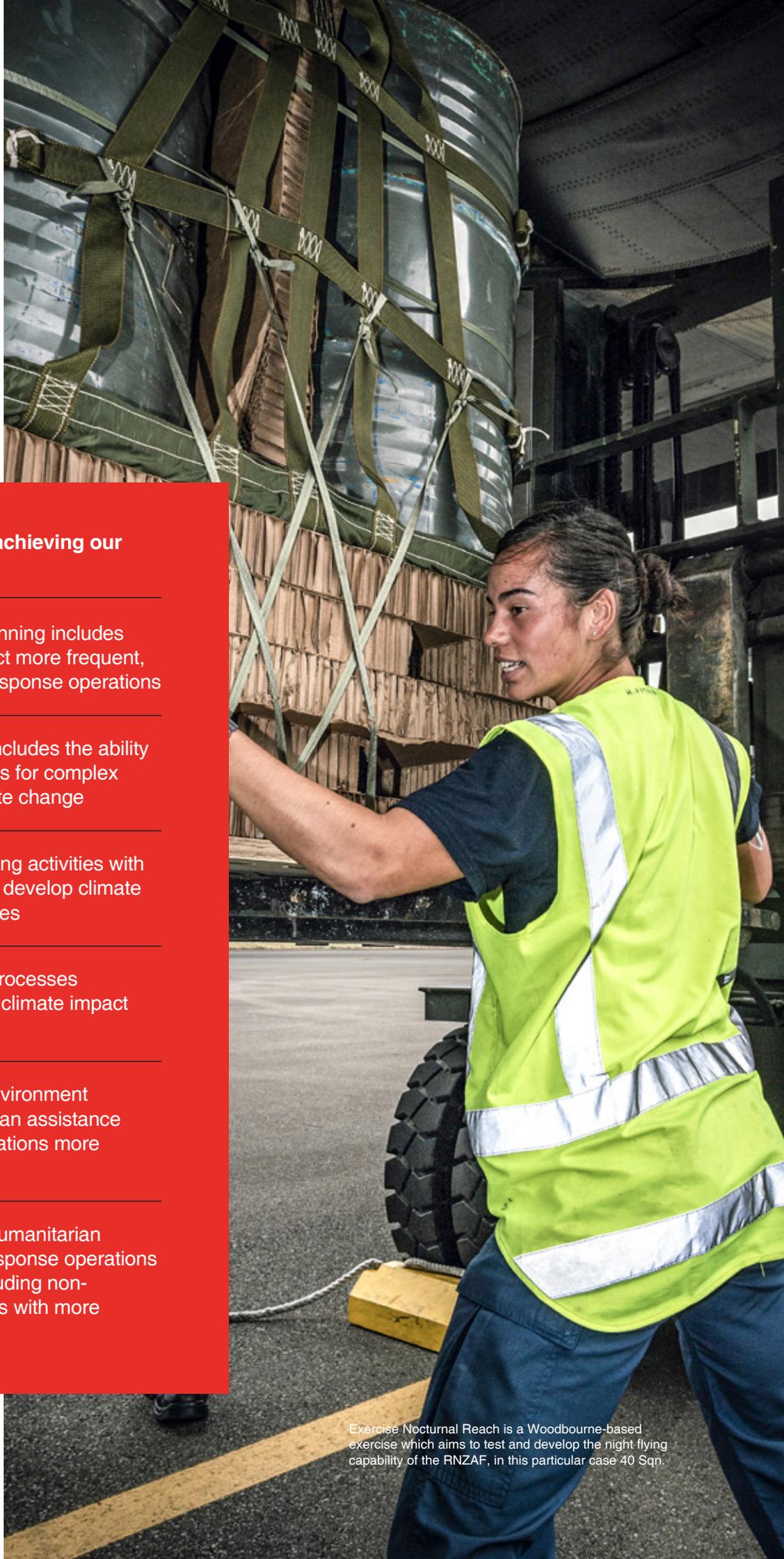
[*Climate Crisis Recommendation 7*]

17. Defence will be prepared to respond to increased operations as a result of climate change. In doing so, military planners will do their best to limit any further climate and environmental impact from the response operation. This can include practical actions during humanitarian assistance and disaster responses, such as providing water from a water point, rather than shipping in water in pre-packaged plastic bottles, and exploring alternative energy sources.

Develop intelligence methods and information systems to assist climate change response operational effectiveness

[*Climate Crisis Recommendation 1.1*]

18. Being able to rapidly gain information on a situation (both an emerging and/or current situation) is critical to an effective response. Defence will develop capabilities to leverage multiple sources of information to swiftly assess the operational environment in a disaster or other humanitarian aid situation, building a comprehensive picture to assist planning and managing operational responses. Additionally, the ability to share that information with partner agencies and organisations through effective information systems will assist comprehensive all-of-government and multinational responses.



19. We will know we are achieving our goal when:

Our Defence capability planning includes the requirements to conduct more frequent, concurrent and complex response operations

Our operational planning includes the ability to provide concurrent forces for complex operations related to climate change

We conduct capacity-building activities with partner nations to mutually develop climate change response capabilities

Our operational planning processes include environmental and climate impact considerations

We conduct operational environment assessments in humanitarian assistance and disaster response situations more rapidly than now

We share information on humanitarian assistance and disaster response operations with partner agencies, including non-governmental organisations with more ease than now

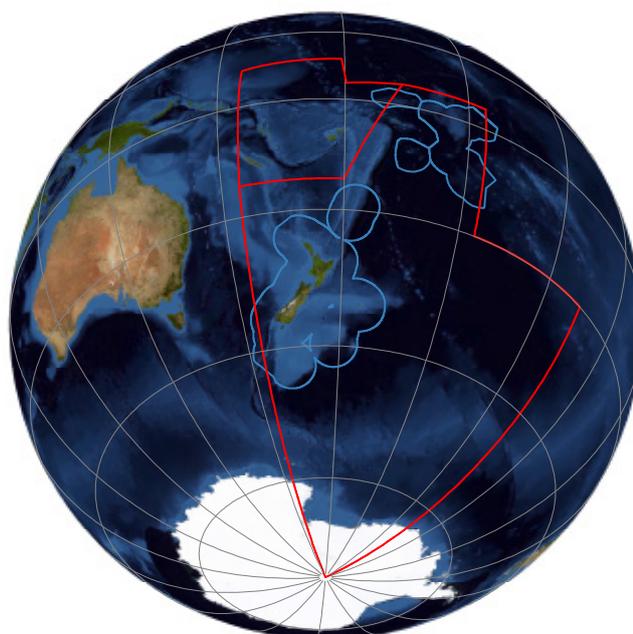
Exercise Nocturnal Reach is a Woodbourne-based exercise which aims to test and develop the night flying capability of the RNZAF, in this particular case 40 Sqn.

RESPOND CASE STUDY:

DEFENCE CAPABILITY PLAN 2019

The *Defence Capability Plan 2019* has a dedicated chapter to demonstrate how the plan is responding to *The Climate Crisis*. The Capability Plan acknowledges that higher levels of readiness will be required to ensure New Zealand is able to respond to events of decreasing predictability. Greater capacity will also be required as events become more frequent, which will result in increased concurrent operational requirements. Furthermore, the maritime impacts of climate change particularly in the Pacific and in the Southern Ocean, could see fishing vessels operating in new areas, including in international waters and New Zealand's expansive search and rescue area of responsibility, in coming years.

The Capability Plan provides for these increased requirements through, for example, planned enhancements to sealift and airlift capabilities, as well as an increase in the size of the New Zealand Army to 6,000 personnel. Planned improved aerial surveillance and maritime domain awareness capabilities able to operate in the Pacific and Southern Ocean, will also help ensure New Zealand is better informed about the impacts and implications of climate change as they unfold.



-  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

A D A P T

20. The Defence Force must maintain the ability to operate effectively in an environment changing from the effects of climate change. Operational effectiveness ranges from operating capabilities and methods that are fit for an environment impacted by climate change, to estate and infrastructure that is resilient to the effects of climate change, and future-focussed policies that are even more climate change aware.
21. Defence must be capable of operating wherever and whenever we are needed, and therefore must adapt to operate effectively in an environment impacted by climate change.

We are already committed to:

Understanding the different impacts of climate change on the Antarctic and Southern Ocean environment and the implications for Defence Force operations and capability requirements

[*Climate Crisis Recommendation 5*]

22. The New Zealand Defence Force is one of the few militaries globally that routinely operates in the Southern Ocean and Antarctic region. Already an environment of extremes, the impacts of climate change will make activities in the region even more complex with a potential increase in high wave levels and an increase in floating ice. To understand the region in more detail, and the changes that are occurring there, the Defence Technology Agency is studying the Southern Ocean and Ross Sea to determine the effects of climate change and how that may change Defence's operational and capability requirements.

Understanding the effects of climate change on our training areas, camps and bases at home

[*Climate Crisis Recommendation 9*]

23. The Defence Estate is the third-largest area of Crown land, at 810km² more than the land areas of Wellington, Napier, Hamilton and Palmerston North cities combined. This estate plays a critical part of generating the capabilities the Defence Force employs to support our community, nation and the world. As with areas all around New Zealand, parts of the estate will be affected by climate change, such as the Devonport North Yard, which will be vulnerable to sea-level rise over time. Defence Estate and Infrastructure is currently examining the potential effects of sea level rise on the Devonport North Yard and the resilience of Defence Force infrastructure more generally to natural hazards.

Next steps – 2021 onwards:

Develop specific adaptation plans for affected training areas, camps and bases

[*Climate Crisis Recommendation 9*]

24. Once the potential risks and impacts of climate change on the Defence estate are better understood, specific adaption plans will be developed. Some training areas, camps or bases may be relatively unaffected. Others may need large-scale planning to deal with the issues that climate change may cause. These plans will also include continued and expanding work with government partners to protect and enhance New Zealand's native flora and fauna present in the Defence Estate, as is already done in many Defence Areas including Whangaparāoa, Waiōuru and Tekapo.

Develop a heightened understanding of the effects of climate change, and adaptation requirements, in all regions in which Defence operates

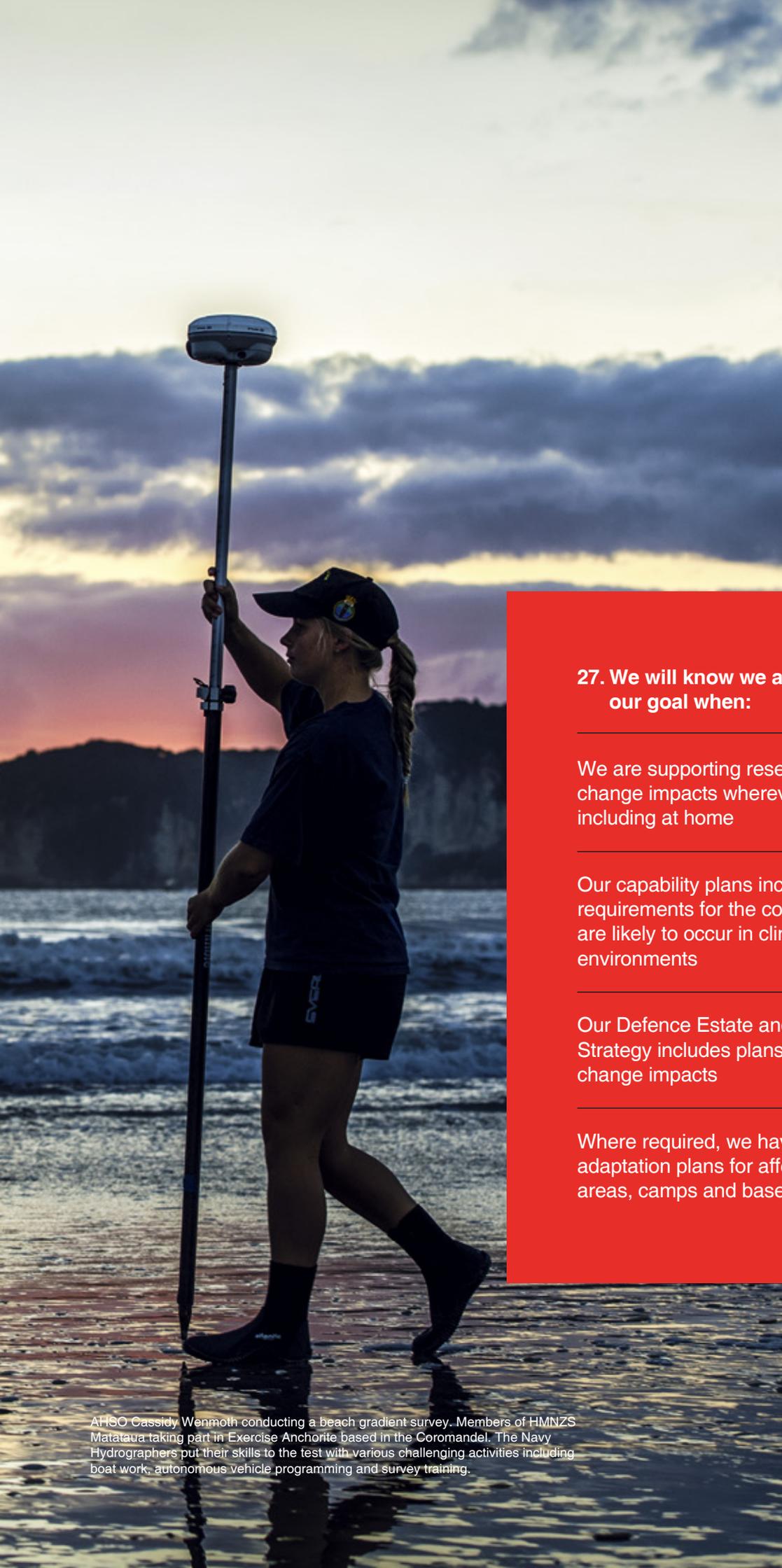
[*Climate Crisis Recommendation 8 & 9*]

25. Through direct research and study, supporting research partners, and through various existing cooperation agreements, Defence will gain a deeper understanding of the effects of climate change in the regions where Defence operates. This will enable the development of specific adaptation plans for New Zealand Defence, stronger understanding of climate and environmental factors during pre-deployment planning, while also providing valuable information to our partners to support their own adaptation needs.

Introduce capabilities designed to cope with the changing environment

[*Climate Crisis Recommendation 1 & 10.1*]

26. The *Defence Capability Plan 2019* identifies capability decisions planned for future years. These include the investment in a Southern Ocean Patrol Vessel in the mid-2020s, specifically designed to operate in the challenging environment of the Southern Ocean. Other future capability decisions will also take into account any data gathered on the effects of climate change on operating requirements for platforms and equipment.



27. We will know we are achieving our goal when:

We are supporting research into climate change impacts wherever we may operate, including at home

Our capability plans include performance requirements for the conditions that are likely to occur in climate changed environments

Our Defence Estate and Infrastructure Strategy includes plans to adapt to climate change impacts

Where required, we have specific adaptation plans for affected training areas, camps and bases

AHSO Cassidy Wenmoth conducting a beach gradient survey. Members of HMNZS Matataua taking part in Exercise Anchorite based in the Coromandel. The Navy Hydrographers put their skills to the test with various challenging activities including boat work, autonomous vehicle programming and survey training.

ADAPT CASE STUDY:

SEA LEVEL RISE – DEFENCE AREAS IN COASTAL AUCKLAND

The Defence Force maintains and operates sites within coastal margins of the Auckland region. Over the last decade, the Defence Force has undertaken assessments to better understand the impacts of sea level rise within the Auckland region. This includes:

- The commissioning of studies in 2013 to report on the effects sea level rise will have on the Defence areas within coastal Auckland; and
- The development of an Estate Strategic Framework in 2015 which provides a long term development plan for Devonport Naval Base, taking into consideration the effects of sea level rise.

Work undertaken to date indicates that adverse effects will be seen through increasing low pressure weather systems coinciding with high tides, leading to occurrences of surface water flooding and eventually, tidal inundation. Both Devonport Naval Base North Yard and Ngataranga Bay (pictured in 2018) currently experience inundation during king tides and in coastal storm events.

The First Principles Review of the Defence Estate Footprint, launched in July 2019, is exploring the impacts of climate change and the rise of technology in scenario analysis. The review is due to be completed by September 2020 and is intended to support New Zealand's community and environmental wellbeing and resilience.

Defence will continue to study the potential effects of climate change on infrastructure, platforms and equipment, to ensure we are still able to effectively operate.



MITIGATE

28. The New Zealand Defence Force and Ministry of Defence are working to reduce our own impact on the climate. Given the capabilities employed by Defence as directed by Government, and the global nature of where we operate and defence partnerships, there are at times unavoidable impacts on the climate from Defence activities.
29. We are committed to taking action in ways that complement the overall effectiveness of the Defence Force's operational response and reduce our impact on the climate and wider natural environment.

We are already committed to:

Establishing a method of measuring carbon emissions

[*Climate Crisis Recommendation 10.3*]

30. The ability to measure greenhouse gas emissions is key to benchmarking our starting point, tracking our emissions and ensuring we are reducing them as we move forward. New Zealand Defence is establishing methods of collating data to provide a total picture of our emissions profile. This will enable visibility across the organisations to aid emissions reduction initiatives and assist in transparent reporting over time.

Minimising the environmental impact of Defence engagement activities

[*New initiative in line with Climate Crisis recommendations*]

31. The Ministry of Defence is actively exploring options for offsetting carbon emissions from domestic and international air flights conducted by Ministry staff on official Defence business, including ways that make a contribution to the wellbeing of New Zealand communities. The Ministry's new travel offsetting policy will be announced by early 2020.

Ensuring climate and wider environmental impact is included in decision-making for capability acquisition

[*Climate Crisis Recommendation 10.1*]

32. The ability to fulfil Defence Force tasks is based on specialised, high-end capabilities that are usually centred on military platforms, vehicles and equipment. Use of these capabilities often has a climate and environmental impact either directly during use or indirectly, including through their ultimate disposal. By including consideration of climate change and other environmental impacts in the decision-making process of capability acquisition, Defence mitigates the overall impact of those capabilities during creation, through use, to disposal.

Being responsible and efficient in our energy use in training areas, camps and bases

[*Climate Crisis Recommendation 10.2*]

33. Energy is a critical component of operating the Defence Estate and Infrastructure, and is used to generate and enable force capabilities. The Defence Force's energy approach ranges from efficient building construction for new projects, adopting energy efficient lighting and heating systems and having energy infrastructure that minimises environmental impacts. The Defence Force will continue to work to identify energy efficiency opportunities across the estate, which will help to reduce Defence's carbon footprint over time.

Replacing non-operational vehicles with low-emission models

[*Climate Crisis Recommendation 10.2*]

34. In addition to operational vehicles and platforms, the Defence Force has a large fleet of non-operational vehicles and is adopting lower emissions variants – including the use of hybrid vehicles – to lower our overall emissions. The Defence Force will also examine its fleet of non-operational vehicles to determine that the right fleet size and type is in place with an eye to further reducing emissions in line with Government targets.

Next steps – 2021 onwards:

Seek low-emission and green technologies for implementation across Defence

[*Climate Crisis Recommendation 6*]

35. As technology advances, the opportunities to further reduce emissions across Defence will increase. Simulation, already widely used in the Defence Force, will continue to replace real-time activities that would otherwise result in emissions. Better engine technology for major platforms will enable emissions reduction without compromising operational effect. Better building materials and components will also further emission reductions overall. Defence will seek out and adopt low-emission and green technologies that further our climate change action goals in ways that continue to complement and build operational performance.

Develop energy strategies for operational and non-operational non-fossil-fuel energy use

[*Climate Crisis Recommendation 10.2*]

36. Energy is critical to the conduct of the Defence Force's business, both operational and non-operational. The Defence Force has already conducted innovation trials into the use of solar energy in operational settings, and seeking alternative sources of energy will continue to minimise reliance on fossil fuels. As technology in areas such as electric vehicles and advanced batteries develops, the ability to adopt them in operational and non-operational settings will become more practicable. Future focused strategies for energy use will ensure Defence remains prepared, resilient in energy requirements, while reducing emissions through efficient and clean energy use.

Vincent Block accommodation. RNZAF Base Whenuapai.

37. We will know we are achieving our goal when:

Our capability acquisition process includes climate change and environmental impact as a factor for decision making throughout the entire life cycle

Our new non-operational vehicles have greenhouse gas emission profiles at least 20% lower than the current (2019) fleet average, in line with Government direction

We are more efficient and clean in our energy use than we are now

We are able to accurately and transparently measure and report our greenhouse gas emissions

New technologies that we introduce have less impact on the climate than the ones they replace

We are able to demonstrate reduced reliance on fossil fuels for operational and non-operational energy needs

MITIGATE CASE STUDY:

DEFENCE ESTATE AND INFRASTRUCTURE SUSTAINABILITY FRAMEWORK

The Defence Estate and Infrastructure Sustainability Framework developed in 2019 has a vision of *Tuku Iho*, in this case explained as “our living legacy”. This recognises that Defence are stewards for the estate on behalf of the nation, and want to leave it, and the wider environment, in as good if not better condition for future generations. There are four pillars that provide the structure for the framework:

- **Kotahitanga** – unity, consensus, participation. Our people are united, professional and accountable through commitment, comradeship, courage and integrity.
- **Kaitiakitanga** – environmental stewardship. The environment is a natural part of us, our heritage and decision making that enables force outputs today and tomorrow.
- **Puawaitanga** – continual growth. The continual improvement of our skills, processes and capacity is integral to manage the current and future Defence estate.
- **Rangatiratanga** – leadership and community role model. Our collective impact approach to leadership will ensure strong and enduring relationships for our future workforce.

Tuku Iho is a key initiative for Defence to mitigate our contribution to climate change and the wider environment, while being more comprehensively sustainable. It will embed sustainability within business-as-usual and mitigate climate impacts to and by the Defence estate. Specific to climate change outcomes, the framework has key priorities of:

- Having fit for purpose and sustainable buildings;
- Understanding and minimising waste impacts;
- Being responsible and efficient with energy and water resources; and
- Supporting safe and healthy transportation.

There are a range of projects underway within these priority areas, and also the other nine priority areas less directly specific to climate change. The Defence Estate and Infrastructure Sustainability Framework is a proactive and future focused approach to sustainability, reaching into all areas of the Defence Force to improve the ability to deliver Defence outputs while protecting our *taonga* for future generations.



ENGAGE

38. Defence is engaging internationally and domestically on the security impacts of climate change. Defence engages internationally with civil society, governments and militaries, and nationally with other government agencies and commercial providers. Through that engagement, we will encourage our partners to consider climate change in their plans and activities, seek to better understand the impacts our partners are facing, their analysis on the security impacts of climate change and where we can partner for collective effort. Respecting cultural contexts, we are guided by the principle of *kaitiakitanga*, and when appropriate, engage with Pacific peoples through Talanoa.⁶ We will seek to share mutual learnings about climate change, and harness the collective effort to deal with climate change and security issues.
39. We will become a trusted partner on climate change and security in the Pacific region and internationally.

We are already committed to:

Working with our Pacific and wider international partners to better understand climate change and security, and support articulating concerns in defence policy

[*Climate Crisis Recommendation 1.1 & 3*]

40. New Zealand Defence played a key role in supporting the French-coordinated study on the security impacts of climate change in the South Pacific by 2030, which was presented to the May 2019 South Pacific Defence Ministers' Meeting in Fiji. The report's recommendations for improving collaboration amongst regional defence organisations in regards to climate change and security were unanimously adopted by Ministers and will be implemented over time. This included a New Zealand Defence proposal to work with member country climate change points of contact to establish a working group to support each other in working through aspects of these recommendations. The Ministry of Defence will host a working level meeting in 2020 for the group to make further progress that will form a progress report to Ministers at the next meeting.



Elevating discussion on defence, climate change and security in the Pacific and internationally, spanning high-level to working-level forums

[*Climate Crisis Recommendation 4*]

41. New Zealand Defence is committed to elevating climate change and security concerns in international forums to spread awareness of the intensifying effects of climate change. At the 2019 Shangri-La Dialogue, New Zealand's Minister of Defence highlighted the important role defence forces play in responding to the security challenges arising from climate change. The speech also covered the essential requirement to build strong, honest relationships to address challenges from climate change and build resilience and long-term stability. Following the speech, New Zealand also led a side event discussion on climate change and security.

⁶ Talanoa is a traditional word used in Fiji and across the Pacific to reflect a process of inclusive, participatory and transparent dialogue. The purpose of Talanoa is to share stories, build empathy and to make wise decisions for the collective good. The process of Talanoa involves the sharing of ideas, skills and experience through storytelling. See: *Advancing Pacific Partnerships 2019*, p13.

42. Other key initiatives include:

- Convening a panel to discuss the gender and climate change nexus at the Women, Peace and Security Summit in Apia from 22–23 August 2019 co-hosted by Samoa and New Zealand. The discussion reinforced that women are key to identifying, understanding and responding to threats exacerbated by climate change, and their participation is essential to related planning and decision making.
- New Zealand Defence is planning to support counterparts through a Ministry of Defence representative taking part in a Defence mitigation and response panel as part of the 25th session of the Conference of the Parties to the United Nations Framework Convention of Climate Change.
- The Ministry of Defence is also planning to convene a working-level seminar on the security impacts of climate change for counterparts from the Association of South East Asian Nations in late 2020.

Supporting climate change action with commercial partners

[*Climate Crisis Recommendation 10.1*]

43. As a large Government organisation, Defence has a part to play as a responsible consumer. Encouraging our commercial suppliers and service providers to be more climate change and environmentally aware through the inclusion of specific sustainability clauses in our contracts is one way Defence will support change. Change will be further supported through the consideration of broader outcomes, including the climate and environmental impact of goods and services that Defence purchases.

Next steps – 2021 onwards:

Where helpful, support partners in developing or enabling their own Defence environment or climate change policies or related actions

[*Climate Crisis Recommendation 2*]

44. New Zealand Defence sought advice from countries that had already integrated climate change into their Defence policies and practices and this was a great assistance when developing our policies. We are now in a position to support others seeking to become more resilient and ready to respond to the increasingly intensifying impacts of climate change. Working with think tanks that assist Defence organisations where practical will be another pillar of this work.

Maintain the momentum for elevating climate change and security and transition to more action-oriented discussions at international fora and defence talks

[*Climate Crisis Recommendation 2*]

45. We will work to learn from each other on actions we can collectively take to minimise our impact on the climate and the environment. We envision this being a holistic approach that focuses on both actions at the strategic level and making sustainable changes at the operational level. This could include changes on camps and bases or with partners when on coalition operations. Encouraging increased participation of women in work on the climate change and security nexus will also be a priority for Defence.

Share with partner militaries our experiences in responding to, adapting to and mitigating climate change through best practice and technology advancements

[*Climate Crisis Recommendation 1, 6 & 9*]

46. Defence has a robust and established network of partners that we engage with on a broad range of issues. Maintaining climate change as a topic for discussion will enable the sharing of understanding and lessons-learned on how to respond to climate change events, and how climate change is more broadly impacting the international security environment. More specifically, we will also seek and share knowledge around adaptation and mitigation techniques that are relevant to military operations abroad and at home and to learn from the experiences of our partners. Defence will continue to seek advances in military and non-military technology that provide benefits in reducing emissions.

47. We will know we are achieving our goal when:

The Defence Climate Change Working Group is established and other recommendations from South Pacific Defence Ministers' Meeting 2019 are progressed and implemented

Engagements relating to climate change become more mature, and climate change is included in Defence Force engagement programmes

Contracts with local and international businesses include specific clauses that support climate change action

We assist partners, when requested, in developing policies relating to environment and climate change issues

We routinely share best practice and technology advancements with partner militaries, and we are learning from our partners



Combat Engineers from Burnham and Linton assist in rebuilding the MSR bridge that leads to Fox Glacier from the town centre.

ENGAGE CASE STUDY:

PACIFIC ENVIRONMENTAL SECURITY FORUM 2019



New Zealand's Ministry of Foreign Affairs and Trade and New Zealand Defence co-hosted the ninth Pacific Environmental Security Forum in Wellington from 21 to 24 May 2019. The forum explored the emerging nexus of environmental stewardship and regional security amongst civil government and military practitioners, and generated forward momentum on practical project outcomes. The four-day forum convened 120 representatives from 40 Indo-Pacific countries as well as key Pacific regional organisations.

Key themes emerging from the forum included:

- Security implications of climate change;
- Oceans and fisheries management and biodiversity;
- The importance of cohesive civilian-military partnership in disaster and humanitarian assistance coordination; and,
- Oil spill response and environmental conservation.

The forum met key objectives for New Zealand by ensuring strong Pacific representation and alignment of the forums activities with existing regional architecture, in the context of the Boe Declaration agreed by Pacific Islands Forum leaders in 2018.

ANNEX 1

The Climate Crisis: Defence Readiness and Responsibilities Recommendations

Improving Defence's climate change readiness and meeting our responsibilities

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.

1. Defence should start planning for increasingly concurrent operational requirements in the South Pacific due to the impacts of climate change.
 - 1.1 This could include updating the suite of Defence planning scenarios to enable preparation for increasing humanitarian assistance and disaster relief and stability operations as well as search and rescue in new areas due to anticipated changes to where fishing vessels operate.
2. 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.
3. 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.
4. Defence should seek to elevate international discussion on the security impacts of climate change, including with foreign partners in bilateral defence talks and at regional forums. This would help Defence learn from others, highlight the impacts on the South Pacific, and emphasise the importance of improving resilience in the region.
5. 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 affect the way the Defence Force should operate in the Southern Ocean and Antarctica.

As part of a broader New Zealand Government effort to address climate change, the Defence Force has an opportunity to be a more environmentally aware agency. This would also help bolster the standing of the Defence Force in the South Pacific region, where climate change is seen as a top security threat.
6. 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.
7. Defence should seek lessons learned from like-minded and close foreign partners on integrating climate change planning and environmental security into business as usual activities.
8. The Defence Force should work with international partners to implement best practices on operations to mitigate environmental impacts that could affect local communities.
9. Defence should continue to look into options for being more sustainable on camps and bases in New Zealand that could be swiftly implemented as well as more ambitious options to be considered in future.
10. Noting the development of the Zero Carbon Bill in New Zealand:
 - 10.1 Defence should explore the addition of an environment and sustainability consideration in procurement and capability planning processes.
 - 10.2 The Defence Force should continue working towards implementation of its Energy Policy, which promotes further exploration of opportunities around sustainability.
 - 10.3 Following the Government's direction for transparency, the Defence Force should investigate how it could work towards reporting on its carbon emissions.

**KO TE MOANA-NUI-A-KIWA
KOTAHI TĀTOU
NŌ NGĀ TINĪ MOTU.
TAKITINI NGĀ MOTU,
ENGARI KOTAHI ANŌ
TE MOANA-NUI-A-KIWA.**

**WE ARE ONE PACIFIC
OF MANY NATIONS.
MANY NATIONS BUT
ONE PACIFIC.**

Minister of Defence, Hon Ron Mark – October 2019



Royal New Zealand Navy offshore patrol vessel (OPV) HMNZS Wellington gives the ships company a week of testing and training in the lead up to a deployment to Raoul island in the Kermadecs.



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