

Children’s Rights in a Changing Climate

Thematic report to the United Nations Committee on the Rights of the Child 6th Periodic Review of New Zealand 93rd Pre-Sessional Working Group (September 2022)

Introduction

This report provides the United Nations Committee on the Rights of the Child with information about the extent to which the rights, special vulnerabilities, needs and views of children are being integrated into climate change adaptation and mitigation in Aotearoa New Zealand (Aotearoa). It has been compiled by OraTaiao: The New Zealand Climate and Health Council, the Children’s Rights Alliance Aotearoa New Zealand, and Conor Twyford.

In Aotearoa, Te Tiriti o Waitangi holds important ramifications for the application of children’s rights, particularly with respect to tamariki Māori. We support the approach being taken to Te Tiriti and children’s rights across all reporting and as set out in the thematic paper “The Rights of Tamariki Māori in Aotearoa New Zealand” submitted to the by Te Puna Rangahau o te Wai Ariki: Aotearoa NZ Centre for Indigenous Peoples and the Law and endorsed in the consolidated report of the Children’s Rights Alliance Aotearoa.^{1 2}

We join calls internationally, and within Aotearoa, for children and their rights to be central to climate change policies and initiatives, including efforts to keep global warming to less than 1.5°C above pre-industrial levels; for a holistic, children’s rights-based approach to the climate and environmental crisis both in terms of mitigation and adaptation, which each have co-benefits.

We acknowledge that the effects of climate change are being, and will be, disproportionately felt by children, particularly tamariki Māori, Pacific children, disabled children and children living in low-income settings in Aotearoa. We also note the significant impacts on children under 5 years of age due to their stage of development.³ and refer the Committee to the thematic report on Children under 5.

In this report, we provide an overview of children’s rights in the climate and environmental crisis, followed by information relating to specific cluster headings, particularly general measures of implementation, general principles, health and welfare and education.

Children’s rights in a changing climate in Aotearoa: overview

¹ This approach is being developed in conjunction with the Office of the Children’s Commissioner and the Human Rights Commission.

² Rights of Tamariki Māori in Aotearoa New Zealand Thematic Report (August 2022), submitted to the UN Committee on the Rights of the Child by Te Puna Rangahau o Te Wai Ariki | Aotearoa New Zealand Centre for Indigenous Peoples and the Law to the UN Committee on the Rights of the Child.

³ Please see Basic Health and Welfare Rights of Children 0 – 5 years of age Thematic Report (August 2022), submitted to the UN Committee on the Rights of the Child by Whanau Awhina Plunket and Save the Children New Zealand

In 2022, the impacts of climate change have been starkly outlined by increasing volatility in weather patterns, with July 2022 being the wettest month on record in many areas.⁴ Communities around Aotearoa have been impacted by floods, tornadoes and landslips, causing billions of dollars worth of damage to farms, homes and businesses, and significant social disruption and displacement. In addition, Aotearoa faces very significant challenges in terms of declining water quality, the level of nitrate pollution in soil, and rapidly declining biodiversity⁵.

Children have expressed a high level of concern about climate change and environmental degradation and pollution. In particular, the mental health challenges of living in a changing climate are already impacting children globally, and is expected to increase⁶. Waves of school strikes were held around Aotearoa in March, May and September 2019, and April 2021. The September 2019 school strike marches drew approximately 170,000 New Zealanders, or 3.5 per cent of the country's population, onto the streets, most of them children.⁷

A concerning aspect of climate change in Aotearoa is the expected impact on Māori children, which will compound pre-existing inequities in life outcomes.⁸ Climate change may also disrupt relationships Māori children have with their ancestral lands and whānau, with implications for cultural identity. Government has a responsibility under Te Tiriti o Waitangi to uphold te tino rangatiratanga o tamariki Māori by protecting taonga, culture and identity⁹. The Crown's lack of action to date on climate change is in breach of its Tiriti obligations. Māori and indigenous people of all ages, including children, should lead climate action; addressing the enduring legacy of colonialism and ecological and social exploitation by building opportunities and systems based on Māori governance regimes and cultural practices would create the relational shifts needed for climate justice in Aotearoa⁵.

Beyond its national borders, Aotearoa has strong connections across the Pacific, where climate change "threatens the livelihoods, security and wellbeing of its people and

⁴ National Institute for Water and Atmospheric Research (NIWA) (2022). Climate Summary for July 2022. <https://niwa.co.nz/climate/monthly/climate-summary-for-july-2022#:~:text=In%20Christchurch%2C%20it%20was%20the,the%20course%20of%20one%20year.>

⁵ Ministry for the Environment. 2020. National Climate Change Risk Assessment for Aotearoa New Zealand: Main report – Arotakenga Tūraru mō te Huringa Āhuarangi o Āotearoa: Pūrongo whakatōpū. Wellington: Ministry for the Environment.

⁶ IPCC 2022 Summary for Policy Makers, Climate Change 2022: Impacts, Adaptation and Vulnerability report Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, et al.(eds.)]. Cambridge University Press, Cambridge

⁷ Radio New Zealand (2019) Thousands demand government action on climate change, 27 September 2019. <https://www.rnz.co.nz/news/national/399778/thousands-young-and-old-demand-government-action-on-climate-change#:~:text=See%20images%20from%20today's%20protests%20around%20the%20country%20here%3>

⁸Rhys Jones, Hayley Bennett, Gay Keating and Alison Blaiklock, 'Climate Change and the Right to Health for Māori in Aotearoa/New Zealand', Health and Human Rights, 16, 1 (2014), pp.54-68

⁹ Thematic Report: The Rights Of Tamariki Māori In Aotearoa New Zealand. Te Puna Rangahau O Te Wai Ariki | Aotearoa Nz Centre For Indigenous Peoples And The Law

ecosystems”. Leaders of Pacific countries have declared a climate emergency.¹⁰ The loss of homeland due to sea level rise will impact on Pacific concepts of identity that are intrinsically related to homeland, culture, language, and wider family. Many children in Aotearoa have deep family connections in the Pacific and regard Pacific islands as their homelands. Climate change impacts not only the physical environment in Pacific countries but also, importantly, the retention of, and connections with culture, language and identity.

Tokelauan children have citizenship rights in Aotearoa, and are equally entitled to realisation of their rights as citizens. Aotearoa also has a responsibility to protect the children of Tokelau as part of its international commitment to address climate change. Tokelau is severely impacted by climate change which poses major existential challenges and threats to the people of Tokelau and their survival as a distinct people and culture.¹¹ This is despite Tokelau’s extremely low greenhouse gas emissions, advocacy and role model action in renewable energy.

Children living in the wider Realm of New Zealand are similarly vulnerable to the direct effects of climate change, such as sea level rise and extreme weather events. As in Tokelau, they also contribute little to climate change. Indirect effects like climate induced migration and displacement away from their homes, villages and homelands will stress cultural mechanisms for identity and intergenerational knowledge transfer, which impacts the wellbeing of children.

Climate justice necessitates that wealthier countries rapidly mitigate their contributions to global warming to protect those who contribute less and are less resourced to adapt to climate change.

The effects of climate change on tamariki Māori¹²

“(A)anthropogenic climate change is intimately connected to the ideologies, systems and practices of colonialism, and . . . the impacts on Indigenous peoples can be conceptualized as an intensification of the process of colonization. It is not possible to understand and address climate-related health impacts for Indigenous peoples without examining this broader context of colonial oppression, marginalization and dispossession.”

¹⁰ Pacific Islands Forum 11-14 July 2022 Suva, Fiji. Forum Communiqué.

<https://www.forumsec.org/2022/07/17/report-communicue-of-the-51st-pacific-islands-forum-leaders-meeting/> See also: World Wildlife Fund. (2021). Time is running out for low-lying islands in the South Pacific.

https://www.wwpacific.org/what_we_do/climatechange/; Mycoo, M., Wairiu, M. et al. (2022). Small Islands. In: Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. <https://www.ipcc.ch/report/ar6/wg2/>

¹¹ Heads of State and Government and Representatives of the Coalition of Low Lying Atoll Nations on Climate Change. High Level Dialogue on Climate Change Induced Migration and Displacement Outcomes Document, 10 October 2015.

<http://www.tokelau.org.nz/Bulletin/October+2015/Climate+induced+migration+outcomes+document.html>

¹² Please see the Rights of Tamariki Māori in Aotearoa New Zealand Thematic Report, fn 2 above for description of Māori collective understandings and key concepts that are essential to protecting the rights of tamariki Māori from climate change.

Climate change poses serious and diverse risks to Māori and a range of climate responses and adaptation plans have been developed by iwi and Māori researchers which prioritise key issues and responses. Like other indigenous peoples, Māori are disproportionately affected because of their special and unique relationship with the natural environment; long-standing socioeconomic deprivation and inequities in health and education; poorer access and quality of services; political marginalisation and discrimination; and at risk from climate mitigation and adaptation policies that may cause harm and threaten their rights.

For Māori children, climate change threatens displacement from their traditional lands; loss of places of cultural importance including urupā (cemeteries) and marae (traditional Māori meeting places); loss of relationships with the natural environment which can lead to loss of traditional ways of life; and disruption of relationships with family, all of which can contribute to loss of cultural identity and knowledge, with potential harmful effects on mental, social and spiritual health¹⁷. Wairua is spirit, an unseen energy that impacts upon all aspects of a person's being, and is central to Māori conceptions of health.¹⁴ It is critical for children's learning as it connects to the "unique capacity of the child to think rationally, creatively and intuitively"¹⁵. Wairua is subject to damage through illness and injury, especially through climate change, and a child's wairua must be acknowledged and protected in order for them to develop to their full potential.

Mahinga kai, food gathering from nature, is important for indigenous Māori knowledge retention and transmission and will be further affected by a disturbed climate and will impact Māori food sovereignty.¹⁶ Mahinga kai has already been deeply impacted by climate-damaging activities that have destroyed food baskets, such as the draining of wetlands for pasture, pollution of waterways, overfishing and coastline degradation. Additionally, the impacts of an inability to forage food from nature extends to all children in Aotearoa.

For example, in June and November 2021, and again in February, March and April 2022, the East Coast of Te Ika a Māui / the North Island of New Zealand was hit hard by severe storms and flooding, impacting Māori farms and landholdings in the region.¹⁷

A recent report from Ngā Pae o te Māramatanga / New Zealand's Māori Centre of Research Excellence report described the multiple risks faced by Māori. These include increased exposure to extreme weather events, reductions in water quality and availability, an increase in vector-borne diseases, disruption to services, food insecurity, and increased stress and inequities, as well as impacts on Māori enterprises and employment. The report said that

¹³ Jones R. Climate change and Indigenous Health Promotion. *Global Health Promotion*. 2019;26(3_suppl):73-81. doi:10.1177/1757975919829713

¹⁴ Durie, M. (1985). A Māori perspective of health. *Social Science and Medicine*, 20, 483-486.

¹⁵ Foster, W. (2009). Conceptualising wairuatanga: Rituals, relevance and realities for teachers (Unpublished Master's thesis). University of Canterbury, Christchurch, New Zealand

¹⁶ Awatere, S., King, D. N., Reid, J., Williams, L., Masters-Awatere, B., Harris, P., ... & Pirkar, J. (2021). He huringa ahuarangi, he huringa ao: A changing climate, a changing world. *Te Arotahi Pap. Ser.*, 7, 1-11.

¹⁷ Burke, P. (2022). Storm challenges Māori farms. *Rural News*.

<https://www.ruralnewsgroup.co.nz/rural-news/rural-general-news/storm-challengesmaori-farms>

climate change also threatens the present and future spiritual wellbeing of tangata Māori, since customary practices, cultural identity, language, lore and cultural infrastructure and activities will all be affected.¹⁸ Traditional Māori knowledge and understanding about living sustainably and collective responsibility and actions are vital for successful climate mitigation and adaptation, when led by Māori and their aspirations.¹⁹

General measures of implementation

The climate and environmental crisis impacts all children's rights, underscoring the need to prioritise children in adaptation and mitigation responses in accordance with CRC article 4. This will require systematic and deliberate strengthening of the general measures of implementation by Government, particularly in the following areas.

- **Data and monitoring.** Lack of disaggregated data on the situation for children and groups of children is a longstanding issue in Aotearoa. Despite recent improvements in gathering information about children and their circumstances, (such as the development of the CYWS indicators and increased focus on the views of children),²⁰ baseline data and on-going data collection to measure and monitor the impact of climate change on children, and specific groups of children, is extremely limited. We are not aware of any mechanism for systematically including data on children into decision-making about climate change adaptation and mitigation.
- **Visibility of children (and groups of children) in laws, policies and practices.** We are deeply concerned that there are not any climate change policies or programmes that are specifically aimed at addressing the special vulnerabilities, needs and views of children.²¹
- **Allocation of resources.** Measures to address the special vulnerabilities and needs of children in climate change policies and practices, and to support their active participation in mitigation and adaptation, need to be specifically and clearly budgeted for in line with UN Committee's General Comment No. 19. This includes tracking the impact of spending.
- **Children's rights and the business sector.** The dairy industry has climate and child rights implications. Agricultural emissions are not in the National Emissions Plan.²² Climate change increases food insecurity. There is public concern about the

¹⁸ Awatere, S., King, D. N., Reid, J., Williams, L., Masters-Awatere, B., Harris, P., Tassell, Matamua, N., Jones, R., Eastwood, K., Pirker, J., & Jackson, A. -M. (2021). He huringa āhuarangi, he huringa ao: A changing climate, a changing world. Te Arotahi Series. Paper, 7. Ngā Pae o te Māramatanga, New Zealand's Māori Centre of Research Excellence. <http://www.maramatanga.ac.nz/te-arotahi-07>

¹⁹ The United Nations Declaration on the Rights of Indigenous Peoples, which Aotearoa has endorsed, protects the right of indigenous peoples to the full enjoyment, as a collective or as individuals, of human rights and fundamental freedoms.

²⁰ Please see the consolidated report.

²¹ Government report paragraph 207.

²² Please see below.

prices charged by supermarkets.²³

- **Reservations.** The general reservation limiting the rights of some children based on their immigration status excludes some children from the CRC. As more people either migrate to or are forced to remain in Aotearoa unlawfully due to climate change and conditions in their homelands, the general reservation may be expected to apply to more children. This is of utmost concern.
- **Tokelau.** Tokelau is a non-self-governing territory of New Zealand. New Zealand's failure to do its fair share to reduce global emissions means it has failed to protect the children of Tokelau from the greatest threat to their rights: climate change. See the section on Tokelauan children above.

General principles

The general principles apply strongly to the climate and environmental crisis. Aotearoa New Zealand has been very slow to take climate action and does not have mechanisms in place to ensure the development and implementation of climate change mitigation and adaptation initiatives that:

- Ensure all children experience their rights equally and guard against discrimination;
- Ensure the the best interests of children are a primary consideration;
- Prioritise children's right to life, survival and maximum development; or
- Enable children to actively participate and have their views heard.

The Climate Change Commission is a new organisation established under legislation²⁴ to give the government independent advice and monitor and review progress. It recognises climate action is an important issue for young people (who told the Commission this in submissions), and future generations, but does not appear to have a focus on children or a commissioner with skills dedicated to children and intergenerational justice.²⁵

In May 2022 the Government published the first national Emissions Reduction Plan.²⁶ It has a welcome emphasis on empowering Māori. But the plan's actions are slow and limited, and lack the scale, speed and coverage necessary for Aotearoa New Zealand to make its fair contribution under the Paris Agreement to limit the global average temperature increase to

²³ Stuff (2022). Consumer NZ: A third of Kiwis don't trust supermarkets, May 27 2022. <https://www.stuff.co.nz/business/128764148/consumer-nz-a-third-of-kiwis-dont-trust-supermarkets>. The Government has recently announced some regulation of the supermarket industry. <https://www.stuff.co.nz/business/129183420/supermarket-code-could-mean-more-variety-without-higher-prices-s-ays-minister>

²⁴ Climate Change Response (Zero Carbon) Amendment Act 2019.

²⁵ He Pou a Rangī the Climate Change Commission (2021). *Ināia tonu nei: a low emissions future for Aotearoa*. <https://www.climatecommission.govt.nz/our-work/advice-to-government-topic/inaia-tonu-nei-a-low-emissions-future-for-aotearoa/>

²⁶ Ministry for the Environment (2022). Te hau mārohi ki anamata Towards a productive, sustainable and inclusive economy: Aotearoa New Zealand's First Emissions Reduction Plan. <https://environment.govt.nz/publications/aotearoa-new-zealands-first-emissions-reduction-plan/>

1.5° Celsius above pre-industrial levels. The agricultural sector, responsible for about half of national emissions, is absent.²⁷

In August 2022, Government published the first National Adaptation Plan and expects to introduce supporting legislation to Parliament by the end of 2023. The plan refers to children as being among several groups disproportionately impacted. One action to strengthen teaching and learning about climate change is specifically for children and young people.²⁸ The plan however, does not take a human rights approach; it does not address who pays and how costs can be shared equitably; and does not consider the multiple co-benefits of some adaptation strategies for example, urban planning and infrastructure that facilitates safe walking and cycling, moving to more plant-based diets, and healthy housing can benefit health and wellbeing, increase equity and reduce emissions.²⁹

Respect for children as key stakeholders and active participants in responding to the climate and environmental crisis is critical to their wellbeing, and addressing the intergenerational impact of climate change initiatives. Government is not acting with the priority and urgency that children, advocates, and experts have repeatedly said is required. It has engaged in very limited meaningful consultation with children about climate action. Children have organised climate protests and marches - freedom of expression and association, coupled with Article 12 general principle, speaks to the government having an obligation to listen. Although children's rights must be judiciable, in practice there are many barriers to children taking legal action for environmental justice.

When they are resourced and supported, children can be very effective climate advocates. 'We asked to be heard' is a short film about Next Generation Conversation, a coalition of climate activists aged between 10-14 years in Ōtautahi-Christchurch, and how they are influencing the climate change journey.³⁰ The group submitted on the Christchurch City Council's Coastal Hazard Adaptation framework and the film follows the process and eventual outcome, which saw the children's concerns and suggestions about climate change education and managed retreat influence the Council's decision-making.

Disabled children

Disabled children's rights to reasonable accommodations and support requires that institutions proactively manage and limit disruption to their lives. There is much to learn in this regard from the experiences of the pandemic as well as the Canterbury earthquakes. Action needs to be taken to prevent the impacts of climate change compounding challenges

²⁷ OraTaiao: The New Zealand Climate & Health Council, Submission to Parliamentary Environment Committee Komiti Taiao: *Emissions budgets published in 2022, and the first Emissions Reduction Plan*, 27 June 2022.

<https://www.orataiao.org.nz/submissions>

²⁸ Ministry for Environment (2022). *Urutau, ka taurikura: Kia tū pakari a Aotearoa i ngā huringa āhuarangi Adapt and thrive: Building a climate-resilient New Zealand – New Zealand's first national adaptation plan.*

<https://environment.govt.nz/publications/aotearoa-new-zealands-first-national-adaptation-plan/>

²⁹ TVNZ Breakfast. Indira Stewart interview with Dermot Coffey, 4 August 2022

https://www.orataiao.org.nz/tvnz_breakfast_4_august_2022

³⁰ Christchurch City Council Civic Offices (2022). We asked to be heard (Video).

https://www.youtube.com/watch?v=GWeG_UEMf-E

faced by disabled children and their families. This includes accessible housing and transport options, as well as stable accommodations being provided throughout a child's education.

As climate change escalates, we need inclusive policies that uphold and ensure disabled children's full participation in society. The rights of disabled children must be factored into the government's mitigation and adaptation plans. For instance, during managed retreat with relocation of homes, schools, workplaces, services; and other places further away from the coast, waterways and existing infrastructure:

- There may be an increased shortage of adapted/accessible housing. Many disabled people, including children, live in low-lying places, and so are more likely to need to move. For disabled tamariki Māori, or whānau with disabled people, this may mean moving further away from traditional lands and places of cultural and spiritual significance.
- Children with intellectual and neurodisabilities may need time and support to process disruption to their lives caused by climate change, such as relocation and increased severe weather events.
- When disabled children move, their supports need to move with them.
- Central and local governments will need to ensure that all necessary facilities and infrastructure in new communities is set up for accessibility.
- Public and private transport will need to be accessible as well as carbon neutral.³¹

The rights of disabled children must be included in disaster risk management planning and preparedness.

A recent New Zealand Council for Educational Research report notes the importance of cultivating educational opportunities that harness the energy and creative capacities that diverse young people, including disabled children, can bring to innovation and problem-solving in a low-emissions future.³² Ensuring we finance research into new technologies that support diverse learners and disabled people, and adopt existing technologies, will benefit not just the climate, but the economy and wellbeing of us all.

Basic health and welfare

The health of land, air, and water is indivisible from human health. As such, climate change is now the greatest threat to the realisation of health for everyone everywhere.³³ Climate change and a failure to address its underlying drivers do and will affect child health both directly and indirectly, including via the broader determinants (e.g. environmental, social, economic, cultural and commercial) of child health in Aotearoa. These various pathways are likely to interact and have compounding impacts, exacerbating existing child health inequities and injustices particularly for Māori, Pacific children, children living with disabilities

³¹ Paul Brown, Disabled Persons Association NZ, March 2022. Personal communication.

³² Bolstad, R (2020). Opportunities for education in a changing climate: Themes from key informant interviews. New Zealand Council for Educational Research.

<https://www.nzcer.org.nz/research/publications/opportunities-education-changing-climate-themes-key-informant-interviews>

³³ Climate change and health. World Health Organisation, 2021.

and in low-income households. From a lifecourse perspective, the differential vulnerabilities and exposures to the effects of climate change, particularly during the highly sensitive intra-uterine and childhood periods can have profound and inequitable impacts not only on the health of children living in Aotearoa today, but also their ultimate life trajectory, further entrenching existing inequities and perpetuating intergenerational health, social and economic injustice. Further, children living today will have greater exposure to climate change related stressors across the course of their lives compared with those currently in their adulthood³⁴.

A holistic understanding of child wellbeing is applied here. Health comprises multiple dimensions of physical, mental, spiritual, cultural, environmental, and familial health.³⁵ Each domain uniquely supports the totality of the health of a child. If one dimension is not attended to, it can lead to unwellness. This is congruent with Māori models of health which account for multiple aspects of wellbeing. Climate change will influence all aspects of child health. Its effects can be categorised as direct, indirect or as mechanisms that increase the risk of disease by acting on the broader determinants of child health, as outlined below. While there is limited local research/evidence to draw on for identifying the child health impacts of climate change in Aotearoa, included below are also impacts identified from global evidence and assessed by local public health experts as likely to be relevant to the Aotearoa context now and in the future.

Direct effects of climate change on child health:

- Aotearoa has already and is projected to continue to experience an increased number of hot days³⁶ and more frequent hot extremes³⁷ due to climate change. In other settings hotter weather has been found to be associated with **prenatal complications** such as preeclampsia and eclampsia and **perinatal risk factors** including low birth weight and preterm births.³⁸
- Heavy precipitation associated with flooding risk is predicted to increasingly affect many parts of New Zealand^{39 40}. Studies in other settings have found flooding to be

³⁴ *The Climate Crisis is a Child Rights Crisis: Introducing the Children's Climate Risk Index* (UNICEF, 2021). A report that identifies how children are exposed and vulnerable to the impacts of climate change, using the Children's Climate Risk Index.

³⁵ Durie M. Māori health models-Te Pae Mahutonga. Retrieved 20 November, 2008.

³⁶ Lawrence, J. Mackey, B. et al (2022): Australasia. In: *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. <https://www.ipcc.ch/report/ar6/wg2/>

³⁷ Royal Society of New Zealand (2017) *Human Health Impacts of Climate Change for New Zealand* <https://www.royalsociety.org.nz/what-we-do/our-expert-advice/all-expert-advice-papers/climate-change-and-health/>

³⁸ Davenport, F., Grace, K., Funk, C. & Shukla, S. Child health outcomes in Sub-Saharan Africa: a comparison of changes in climate and socioeconomic factors. *Glob. Environ. Change* 46, 72–87 (2017).

³⁹ Lawrence, J. Mackey, B. et al (2022): Australasia. In: *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. <https://www.ipcc.ch/report/ar6/wg2/>

⁴⁰ Royal Society of New Zealand (2017) *Human Health Impacts of Climate Change for New Zealand* <https://www.royalsociety.org.nz/what-we-do/our-expert-advice/all-expert-advice-papers/climate-change-and-health/>

associated with **increased child morbidity and mortality**⁴¹ including from drowning and unintentional injury;⁴² increased risk of communicable diseases, particularly from water and food^{43 44}; increased respiratory infections, and via impacts on nutrition⁴⁵. Increased precipitation and flooding also has the potential to exacerbate both acute and chronic illness by reducing access to child health services in Aotearoa. This will disproportionately affect Māori and Pacific children, children living with disabilities and children from low-income families.

Indirect effects of climate change on child health:

Mental Health

- As a result of climate change, heightened mental distress is already being reported among children globally⁴⁶. Both the direct and flow-on effects of climate change place children, including in Aotearoa, at increased risk of poor mental health and associated disorders, including for example, depression, anxiety, PTSD, attachment disorders, and substance abuse⁴⁷. These in turn can precipitate problems with emotion regulation, cognition, learning, behaviour, language development, and academic performance which have effects across the child's lifecourse. Children are more prone to psychological impacts from extreme events, such as those that may result from a changing climate and the social upheaval it may cause⁴⁸.

Spiritual Health and Identity

- For Māori children, climate change threatens displacement from their land; loss of places of cultural importance including urupā (cemeteries) and marae (traditional Māori meeting places); loss of relationships with their natural environment which can lead to loss of traditional ways of life; and disruption of relationships with family and ancestors, all of which can affect cultural identity and knowledge systems, with

⁴¹ Mrema, S., Shamta, A., Selemani, M. & Masanja, H. The influence of weather on mortality in rural Tanzania: a time-series analysis 1999–2010. *Glob Health Action*. 2012; 5: 33-43

⁴² Mills, D., Jones, R., Wobus, C., Ekstrom, J., Jantarasami, L., St. Juliana, A., & Crimmins, A. Projecting age-stratified risk of exposure to inland flooding and wildfire smoke in the United States under two climate scenarios. *Environ Health Perspect*. 2018; 126(4): 047007

⁴³ Phung D, Huang C, Rutherford S, Chu C, Wang X, Nguyen M. Association between annual river flood pulse and paediatric hospital admissions in the Mekong Delta area. *Environ Res*. 2014 Nov;135:212-20. doi: 10.1016/j.envres.2014.08.035

⁴⁴ Zhang N, Song D, Zhang J, Liao W, Miao K, Zhong S, Lin S, Hajat S, Yang L, Huang C. The impact of the 2016 flood event in Anhui Province, China on infectious diarrhea disease: An interrupted time-series study. *Environ Int*. 2019 Jun;127:801-809. doi: 10.1016/j.envint.2019.03.063

⁴⁵ Rodriguez-Llanes JM, Ranjan-Dash S, Mukhopadhyay A, Guha-Sapir D. Flood-Exposure is Associated with Higher Prevalence of Child Undernutrition in Rural Eastern India. *Int J Environ Res Public Health*. 2016 Feb 6;13(2):210. doi: 10.3390/ijerph13020210.

⁴⁶ Hickman, C., Marks, E., Pihkala, P., Clayton, S., Lewandowski, R. E., Mayall, E. E., ... & van Susteren, L. (2021). Climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey. *The Lancet Planetary Health*, 5(12), e863-e873.

⁴⁷ Burke, S. E., Sanson, A. V., & Van Hoorn, J. (2018). The psychological effects of climate change on children. *Current psychiatry reports*, 20(5), 1-8.

⁴⁸ Ministry for the Environment. 2022. Aotearoa New Zealand's first national adaptation plan. Wellington. Ministry for the Environment.

potential harmful effects on health⁴⁹. Wairua, sometimes conceptualised as spirit or spiritual health, is subject to damage through illness and injury, especially through climate change, and a child's wairua must be acknowledged and protected in order for them to develop to their full potential. Wairua is influenced by other dimensions of health, and when those are affected by climate change e.g. by displacement or heat stress, wairua is also affected.

Physical Health

- Change to the geographical distribution of **existing vector-borne diseases** is predicted⁵⁰ (e.g. dengue and chikungunya) which may affect children in Aotearoa. Given that such spread would likely be concentrated in the warmer North Island and coastal areas where the majority of Māori communities are located, Māori children would likely be disproportionately affected.
- Climate change may be responsible for a significant proportion of **diarrhoeal disease globally**⁵¹. In Aotearoa increased frequency of diarrhoeal illness has been observed after high rainfall events, which are expected to increase in frequency and intensity in already wet areas around Aotearoa⁵². One in 25 children already do not have access to potable water in their homes, and clean water is at 'extreme' risk from climate change according to the 2020 National Climate Change Risk Assessment. Reduced access to clean drinking water is a leading cause of diarrhoeal disease⁵³.
- **Increased respiratory disease.** Increased average rainfall, as expected in some areas of Aotearoa⁵⁴, has been correlated with a higher risk of childhood viral and bacterial lower respiratory tract infections⁵⁵. Rapid onset extreme weather events (including heatwaves and heavy precipitation which are also expected to increase in Aotearoa⁵⁶) increase children's vulnerability to various pathogens causing lower respiratory tract infections⁵⁷.

⁴⁹ Awatere, S., King, D. N., Reid, J., Williams, L., Masters-Awatere, B., Harris, P., ... & Pirkar, J. (2021). He huringa āhuarangi, he huringa ao: A changing climate, a changing world. Te Arotahi Pap. Ser, 7, 1-11.

⁵⁰ Helldén D, Andersson C, Nilsson M, Ebi KL, Friberg P, Alfvén T. Climate change and child health: a scoping review and an expanded conceptual framework. *Lancet Planet Health*. 2021 Mar;5(3):e164-e175. doi: 10.1016/S2542-5196(20)30274-6.

⁵¹ Carlton EJ, Woster AP, DeWitt P, Goldstein RS, Levy K. A systematic review and meta-analysis of ambient temperature and diarrhoeal diseases. *Int J Epidemiol*. 2016 Feb;45(1):117-30. doi: 10.1093/ije/dyv296

⁵² Royal Society Te Apārangi. (2017). Human health impacts of climate change for New Zealand. <https://www.royalsociety.org.nz/assets/documents/Report-Human-Health-Impacts-of-Climate-Change-for-New-Zealand-Oct-2017.pdf>

⁵³ WHO, Diarrhoeal Disease. 2017. <https://www.who.int/news-room/fact-sheets/detail/diarrhoeal-disease>

⁵⁴ Royal Society of New Zealand (2017) Human Health Impacts of Climate Change for New Zealand <https://www.royalsociety.org.nz/what-we-do/our-expert-advice/all-expert-advice-papers/climate-change-and-health/>

⁵⁵ Mirsaeidi M, Motahari H, Taghizadeh Khamesi M, Sharifi A, Campos M, Schraufnagel DE. Climate Change and Respiratory Infections. *Ann Am Thorac Soc*. 2016 Aug;13(8):1223-30.

⁵⁶ Mirsaeidi M, Motahari H, Taghizadeh Khamesi M, Sharifi A, Campos M, Schraufnagel DE. Climate Change and Respiratory Infections. *Ann Am Thorac Soc*. 2016 Aug;13(8):1223-30.

⁵⁷ Xu Z, Liu Y, Ma Z, Li S, Hu W, Tong S. Impact of temperature on childhood pneumonia estimated from satellite remote sensing. *Environ Res*. 2014 Jul;132:334-41. doi: 10.1016/j.envres.2014.04.021.

- Children are particularly sensitive to the effects of **exposure to air pollution**⁵⁸. Particulate matter air pollution is a direct byproduct of fossil fuel combustion. Exposure to particulate matter reduces child lung function, especially for children with asthma, resulting in increased hospital visits, admissions and deaths^{59 60}. Air pollution is worsening in Aotearoa and health impacts from air pollution have increased since 2006, largely due to NO₂ from motor vehicles. Cumulatively, air pollution caused 845 hospitalisations for childhood asthma and 13,229 cases of childhood asthma in Aotearoa in 2016. Children attending early childhood education centres located in high traffic areas are at greater risk of developing asthma.⁶¹ Motor vehicles were the largest contributor to air pollution health impacts in New Zealand in 2016, and in the same year 81.0% of the New Zealand population lived in areas with an annual average PM_{2.5} exceeding the World Health Organization (WHO) 2021 guideline level (of 5µg/m³)⁶². Failure to address excessive traffic will continue to adversely impact children's health. Strengthening transport infrastructure through supporting active modes of trip-making would reduce air pollution and the burden it poses on children's health.
- **Nitrate in waterways and drinking water** is a hazardous substance. Reliance on intensive use of nitrogen fertiliser contributes to climate change in Aotearoa, accounting for more emissions than domestic aviation. Aotearoa continues to be one of the highest users of synthetic nitrogen fertiliser globally and has seen a 693% increase in its use since 1990⁶³. Nitrogen leaches into the air as a potent greenhouse gas, causes eutrophication of waterways, and contaminates groundwater. The use of nitrogen fertilisers has enabled the proliferation of intensive animal farming which contributes further to climate change by being a major source of emissions⁶⁴ and a significant driver of land and water ecosystem disruption via land use change. Via its contribution to climate change and environmental degradation, intensive use of fertilisers in Aotearoa contributes to deleterious effects on child health via various pathways.
- Increased temperatures and precipitation may intensify the pollen season, increasing **allergic conditions** e.g., allergic rhinitis, allergic conjunctivitis, atopic dermatitis and asthma⁶⁴. Increased temperatures will also likely increase indoor mould growth. This impact will be compounded by the effects of climate change on housing (see below).

Determinants of health and wellbeing

⁵⁸ Kulkarni, N., & Grigg, J. (2008). Effect of air pollution on children. *Paediatrics and child health*, 18(5), 238-243.

⁵⁹ Li S, Williams G, Jalaludin B, Baker P. Panel studies of air pollution on children's lung function and respiratory symptoms: a literature review. *J Asthma*. 2012 Nov;49(9):895-910. doi: 10.3109/02770903.2012.724129

⁶⁰ Ward, C.J. It's an ill wind: the effect of fine particulate air pollution on respiratory hospitalizations. *Can J Econ*. 2015; 48: 1694-1732

⁶¹ Clelland, P., Lyne, M., Salmond, J. A., Chelimo, C., & Dirks, K. A. (2015). Nitrogen dioxide exposure at early childhood centres next to high-and low-traffic roads in Auckland, New Zealand. *Air Quality and Climate Change*, 49(1), 28-31.

⁶² Indicator findings. Ministry for the Environment(2021).

⁶³ New Zealand's Greenhouse Gas Inventory 1990 2020 snapshot. (2022). Ministry for the Environment.

⁶⁴ Luschkova, D., Traidl-Hoffmann, C., & Ludwig, A. (2022). Climate change and allergies. *Allergo Journal International*, 1-7.

Unreliable access to clean drinking water.

- Access to clean drinking water is a human right and critical for child health. The National Environmental Standards for Drinking Water (NES-DW) are not ambitious enough in limiting contamination of drinking water in Aotearoa. Climate-damaging agricultural practices, particularly high use of nitrogen fertilisers and high stocking rates, are linked to degraded water quality⁶⁵. High concentrations of nitrates have been found in 58% of Aotearoa's river length⁶⁶, 8% of wells monitored in the Canterbury region already exceed the acceptable level of nitrates and 68% of monitored groundwater wells are very likely to have increasing nitrate trends⁶⁷. High concentrations of nitrates in drinking water have been linked to increased risk of methemoglobinemia in both infants and older children.⁶⁸ The acceptable level of nitrate contamination in Aotearoa is set at the limit where it is able to cause blue baby syndrome. Groundwater impacted by intensive farming may reach about double the maximum acceptable value of nitrates, rendering it undrinkable for many years. Even the maximum acceptable value of nitrates is contested, since effects on infants have been associated with even lower levels than the limit set in Aotearoa.⁶⁹ Use of nitrogen fertiliser has also enabled higher cattle stocking rates, which further contributes to nitrate pollution of water and other environment-damaging effects. While evidence of the severity of health effects of nitrate contamination of drinking water are mixed, vigilant monitoring of nitrate contamination of drinking water must be carried out and the health impacts on infants and children evaluated.

Transport.

- Transport is a significant contributor to climate change in Aotearoa, contributing 16.7% of emissions, of which 90% is due to road vehicle emissions.⁷⁰ A dominant 'car culture', further entrenched by the prioritisation of car-centric infrastructure, not only contributes to carbon emissions and climate change (with the various described direct and indirect child health impacts) but in and of itself has deleterious effects on child physical and psychosocial health.
- Passive transport to school and elsewhere limits children's physical activity levels, missing an opportunity for improved cardiovascular fitness and potentially contributing to increased overweight and obesity. Aotearoa has seen a reduction in the use of active transport, such as biking and walking, amongst both adults and

⁶⁵ Nitrates in drinking-water. The Prime Minister's Chief Science Advisor. (2022). <https://www.pmcsa.ac.nz/topics/nitrates/>

⁶⁶ River water quality: nitrogen. Stats NZ. (2022).

<https://www.stats.govt.nz/indicators/river-water-quality-nitrogen/>

⁶⁷ Joy, M. K., Rankin, D. A., Wöhler, L., Boyce, P., Canning, A., Foote, K. J., & McNie, P. M. (2022). The grey water footprint of milk due to nitrate leaching from dairy farms in Canterbury, New Zealand. *Australasian Journal of Environmental Management*, 1-23.

⁶⁸ Sadeq, M., Moe, C. L., Attarassi, B., Cherkaoui, I., ElAouad, R., & Idrissi, L. (2008). Drinking water nitrate and prevalence of methemoglobinemia among infants and children aged 1–7 years in Moroccan areas. *International Journal of Hygiene and Environmental Health*, 211(5-6), 546-554.

⁶⁹ Sherris, A. R., Baiocchi, M., Fendorf, S., Luby, S. P., Yang, W., & Shaw, G. M. (2021). Nitrate in drinking water during pregnancy and spontaneous preterm birth: A retrospective within-mother analysis in California. *Environmental Health Perspectives*, 129(5), 057001.

⁷⁰ New Zealand's Greenhouse Gas Inventory 1990 2020 snapshot. (2022). Ministry for the Environment.

children.⁷¹ Only 38% of New Zealand children aged 8–13 years reached the minimum recommended amount of daily physical activity.⁷² While children from low-income households are more likely to walk to school, this is often in unsafe environments which leads to inequities in childhood road traffic injury⁷³. Shifting from passive to active transport may reverse these impacts as well as also reduce vehicle traffic (particularly around schools) improving road safety and decreasing air pollution.⁷⁴ Poorly designed transport systems can be one of the greatest barriers to accessible journeys for disabled people, including children.

- Neighbourhoods with higher traffic volumes provide fewer spontaneous opportunities for social contact, development of spatial skills and independence, and leads to children having negative feelings about where they live.⁷⁵ Further, children tend to spend the most time in their neighbourhoods, so are significantly affected by the makeup of their surroundings. The mental health effects of poor-quality transport systems disproportionately affects low-income communities and children living within them. Increasing traffic volumes are creating greater levels of traffic noise; longer, more exhausting commutes; and a decline in feelings of 'control' and self-efficacy associated with journeys.⁵⁰ These negative sensory and psychological experiences are distressing, particularly for people who already experience psychosocial distress and those who already have more frequent experiences of feeling less 'in control' and having fewer 'choices' in other aspects of their lives, i.e. children, low-income, and disabled people.
- Low-traffic neighbourhoods tend to provide richer social interactions and environments and are associated with better child development, as well as better physical and psychosocial health outcomes.⁷⁶ They can also provide an enlarged sense of community and belonging. Children who are able to use active modes of transport have better opportunities for play, exploration and independence and have greater life satisfaction. Improving transport infrastructure by focusing on the needs of disabled, low-income, and Māori children has the potential to contribute to

⁷¹ Wild, K., Woodward, A., Herbert, S., Tiatia-Seath, J., Collings, S., Shaw, C., & Ameratunga, S. (2021). The relationship between transport and mental health in Aotearoa New Zealand (Waka Kotahi NZ Transport Agency research report 675).

⁷² Smith, M., Ikeda, E., Hinckson, E., Duncan, S., Maddison, R., Meredith-Jones, K., ... & Mandic, S. (2018). Results from New Zealand's 2018 report card on physical activity for children and youth. *Journal of Physical Activity and Health*, 15(s2), S390-S392.

⁷³ J. Hosking, S. Ameratunga, D. Exeter, J. Stewart, A. Bell. *Ethnic, socioeconomic and geographical inequalities in road traffic injury rates in the Auckland region*. *Aust. N. Z. J. Public Health*, 37 (2) (2013), pp. 162-167

⁷⁴ Mandic S, Jackson A, Lieswyn J, Mindell JS, García Bengoechea E, Spence JC, Wooliscroft B, Wade-Brown C, Coppell K, Hinckson E. (2019) Key Policy Recommendations for Active Transport in New Zealand. Dunedin, New Zealand: University of Otago

⁷⁵ Appleyard, B. (2017). The meaning of livable streets to schoolchildren: An image mapping study of the effects of traffic on children's cognitive development of spatial knowledge. *Journal of Transport & Health*, 5, 27–41

⁷⁶ Schoeppe, S., Duncan, M. J., Badland, H. M., Oliver, M., & Browne, M. (2014). Associations between children's independent mobility and physical activity. *BMC Public Health*, 14(1), 1–18.

improving a range of health measures and reducing health inequities in Aotearoa via the various pathways described as well as more indirectly via contributing to carbon emission reductions to limit climate change.

- **Food systems and resulting food environments** are driving dietary patterns characterised by high levels of consumption of ultra-processed foods and red meat and low consumption of plant matter, contributing to **childhood overweight and obesity and increasing the risk of chronic disease** later in life⁷⁷ which inequitably harms Māori. Simultaneously, the increasing production of processed foods and red meat contributes to greenhouse gas emissions and climate change which in turn may affect **food and nutrition security** in Aotearoa primarily via increased cost but also disturbed local and global food supply chains⁷⁸, most deeply affecting already disadvantaged children and is disproportionately affecting Māori children⁷⁹. Food insecurity contributes to poorer physical and mental health and higher levels of stress⁸⁰.
- While poor diet is the leading modifiable cause of health loss in Aotearoa⁸¹, there is no national food or diet strategy in place to protect nutrition security or food sovereignty and food and nutrition policy in Aotearoa continues to be dominated by industry interest⁸². Aotearoa has failed to improve most key indicators of nutrition in the last 5 years, and in fact has regressed in some areas.⁸³ As such, social and nutrition researchers have called for a national strategy for food systems that is restorative (environmentally and socially), equitable, and healthy.⁸⁴
- Myriad breaches of Te Tiriti o Waitangi and the right of Māori to tino rangatiratanga in Aotearoa have manifested as systems (including the food system) that do not benefit and/or actively harm Māori. Food sovereignty is possible when people are in control of their food system such that they are nutritionally independent and can ensure

⁷⁷ Swinburn BA, Kraak VI, Allender S, Atkins VJ, Baker PI, Bogard JR, Brinsden H, Calvillo A, De Schutter O, Devarajan R, Ezzati M. The global syndemic of obesity, undernutrition, and climate change: the Lancet Commission report. *The lancet*. 2019 Feb 23;393(10173):791-846.

⁷⁸ Tapsell, L. C., Probst, Y., Lawrence, M., Friel, S., Flood, V., McMahon, A., & Butler, R. (2011). Food and nutrition security in the Australia-New Zealand region: impact of climate change. *Healthy Agriculture, Healthy Nutrition, Healthy People*, 102, 192-200.

<https://ro.uow.edu.au/cgi/viewcontent.cgi?article=4606&context=hbspapers>

⁷⁹ Ministry of Health. (2019). Household Food Insecurity Among Children: New Zealand Health Survey

⁸⁰ Carter, K. N., Lanumata, T., Kruse, K., & Gorton, D. (2010). *What are the determinants of food insecurity in New Zealand and does this differ for males and females?* Australian and New Zealand Journal of Public Health.

⁸¹ Ministry of Health. 2016. Health Loss in New Zealand 1990–2013: A report from the New Zealand Burden of Diseases, Injuries and Risk Factors Study. Wellington: Ministry of Health.

⁸² Jenkin, G., Signal, L., & Thomson, G. (2012). Nutrition policy in whose interests? A New Zealand case study. *Public Health Nutrition*, 15(8), 1483-1488. doi:10.1017/S1368980011003028

⁸³ Mackay, S., Gerritsen, S., Sing, F., Vandevijvere, S., & Swinburn, B. (2022). Implementing healthy food environment policies in New Zealand: nine years of inaction. *Health research policy and systems*, 20(1), 1-13.

⁸⁴ Moeke-Pickering, T., Heitia, M., Heitia, S., Karapu, R., & Cote-Meek, S. (2015). Understanding Māori food security and food sovereignty issues in Whakatāne. *Mai J*, 4(1), 29-42.

healthy futures for their children, families, and communities. It is therefore indivisible from rangatiratanga. There is a widespread lack of Māori food sovereignty in Aotearoa due to factors related to climate change including significant depletion of ecosystems limiting traditional food gathering practices. The failure of the Aotearoa food system to deliver food security and food sovereignty to Māori can be seen as a breach of Te Tiriti o Waitangi because it impedes the right of Māori to health equity and tino rangatiratanga.⁸⁵ Further, lack of food sovereignty and therefore reduced opportunity for Māori children to inherit taonga tuku iho (treasures from ancestors; language, identity, knowledge, culture) impinges on their right to cultural identity and their ability to exercise those rights in their communities, as necessitated in Te Tiriti o Waitangi, UNDRIP, and CRC.

- The dairy industry affects child health indirectly via its significant contribution to carbon emissions and climate change⁸⁶, and some dairy factories use coal to create the process heat necessary to dry milk.⁸⁷ Fonterra, the New Zealand multinational, which is one of the world's largest dairy companies, is one of the country's largest coal users, and intends to continue using coal until 2037.^{88 89}
- The failure of the recent Emissions Reduction Plan to adequately address agricultural emissions in a timely manner has significant implications for the rights of children. These are the largest source of emissions in NZ, yet are exempt from the Emissions Trading Scheme, meaning they are not accountable for the climate and social costs incurred by their pollution. There will only be a 1% reduction⁹⁰ in agricultural emissions by 2030, despite the government committing to a 10% reduction. For Aotearoa to contribute fairly to climate mitigation, it would have to reduce emissions by 80% from 1990 levels before 2030.⁹¹ However, no policy or plan is on track to ensure such a transition is possible or just. Failure to act on agricultural emissions prevents timely action to address the key contributor to climate change in Aotearoa and the burden of action will fall to the current generations and those coming after.
- **An adequate standard of living.** The Government has yet to implement the Welfare Expert Advisory Group's recommendations on social security to ensure an adequate standard of living for all children including access to nutritious food, health care,

⁸⁵ Shirley, L. (2013). Is Māori food sovereignty affected by adherence, or lack thereof, to Te Tiriti O Waitangi?.

⁸⁶ New Zealand's Greenhouse Gas Inventory 1990 2020 snapshot. (2022). Ministry for the Environment.

⁸⁷ Radio New Zealand News (2017). Environmental group criticises coal-fired milk plant, 26 September 2017. <https://www.rnz.co.nz/news/country/339934/environmental-group-criticises-coal-fired-milk-plant>

⁸⁸ Coal Action Network Aotearoa (2019), Coal In Aotearoa . https://coalaction.org.nz/wp-content/uploads/2019/08/coal_in_aotearoa_2019.pdf

⁸⁹ Fonterra (2021). Submission to the Climate Change Commission 2021 Draft Advice for Consultation. <https://www.fonterra.com/content/dam/fonterra-public-website/fonterra-new-zealand/documents/pdf/submission-climate-change-commission-draft-recommendations.pdf>

⁹⁰ He Waka Eke Noa Discussion Document. Steering Group Discussion Document to support Partnership Targeted Engagement Nov/Dec 2021.

<https://hewakaekenoa.nz/wp-content/uploads/2021/11/He-Waka-Eke-Noa-Draft-Engagement-Document-November-December-2021.pdf>

⁹¹ Oxfam (2020). A Fair 2030 Target For Aotearoa.

<https://www.oxfam.org.nz/wp-content/uploads/2020/09/Oxfam-NZ-Briefing-A-Fair-2030-Target-for-Aotearoa.pdf>

education and healthy housing⁹². In this context, the effects of climate change are likely to compound existing disadvantages for low-income families, for example the availability and standard of housing is likely to be affected by extreme weather events as well as increased temperatures and precipitation. This will disproportionately affect Māori and Pacific children.

- **Violence prevention.** It can be anticipated that stress caused by displacement, and the social and economic disruption, of families, communities, and services, due to the climate and environmental crisis, may result in increased risks of physical, sexual, psychological and gender-based violence, and neglect for children.

Education

Access to education

Access to education is already being affected by natural disasters caused by weather-related events. As discussed earlier, the East Coast of the North Island has experienced a series of floods in short sequence over the last 12 months. In March 2022, 24 schools and 27 early learning centres were forced to shut as a result.⁹³ Recent severe rainfall and flooding has again affected the ability of schools and early childhood centres all around the country to operate - with some having to close temporarily, or move online.⁹⁴

Coastal flooding and sea level rise is likely to particularly affect Māori students. In 2021, the National Institute of Water and Atmospheric Research (NIWA) published data showing that rising tides will likely put up to 94 schools in the country at risk of flooding and closures.⁹⁵ NZEI Te Riu Roa analysis of enrolment data for those schools against national population

⁹² Children Can't Live On Promises: A 2021 Stocktake of Implementation of the Welfare Expert Advisory Group's 2019 Recommendations. (2021). [Child Poverty Action Group](#).

⁹³ Education Gazette editors (2022). Community and school rise to challenge of flooding. Education Gazette, 101(4). <https://gazette.education.govt.nz/articles/communities-unite-to-support-tairawhiti/>

⁹⁴ See for example, Northern Advocate (2022). Heavy rain in Northland expected to ease after day of flooding, school closures, 26 July 2022.

<https://www.nzherald.co.nz/northern-advocate/news/heavy-rain-in-northland-expected-to-ease-after-day-of-flooding-school-closures/U7AF2PVRQXPMOFI3NWUZU67Q5Q/>; Stuff (2022). Flooding and sinkhole 'sludge' at Christchurch school sees lessons move online, 27 July 2022.

<https://www.stuff.co.nz/national/education/129402175/flooding-and-sinkhole-sludge-at-christchurch-school-sees-lessons-move-online>; Otago Daily Times (2022). Schools closed, rainfall warning extended in south, 27 July 2022.

<https://www.odt.co.nz/star-news/star-christchurch/schools-closed-rainfall-warning-extended-south>; and

Otago Daily Times (2022). Highway reopens, council eyes clean-up after rain, 27 July 2022.

<https://www.odt.co.nz/news/dunedin/highway-reopens-council-eyes-clean-after-rain>

⁹⁵ Wannan, O. (2021). Rising tides put up to 94 schools at risk of flooding and closures. Stuff News. <https://www.stuff.co.nz/environment/climate-news/124183902/rising-tides-put-up-to-94-schools-at-risk-of-flooding-and-closures>

averages found that tamariki Māori were 10 per cent more likely to attend those schools than children from other ethnic backgrounds.⁹⁶

Right to effective climate change education

Article 12 of the Paris Agreement commits governments to educating their populations, including young people, about climate change. Article 29(e) of the UNCRC speaks to children's right to an education that develops respect for the natural environment. Children also have rights to play, to experience the outdoors, and build connections with the natural world. To walk confidently into the future, students also need to understand how we arrived in this place; to develop a critical understanding of the origins of the climate crisis, and the scope and depth of environmental injustice.

To date, climate change education in Aotearoa has been delivered in a piecemeal fashion. There is no comprehensive climate change education strategy, and little provided in the way of professional development or initial teacher education. Any climate change education that is delivered depends on the energy of committed educators and their schools.

Effective climate change education requires an interdisciplinary approach, one that is grounded in indigenous knowledge and integrated into all aspects of the curriculum, at all ages and stages.

Conclusion

At a minimum, to safeguard and uphold children's rights during the climate crisis and intergenerationally, Aotearoa needs to:

- Reduce emissions – gross emissions are not being driven down fast enough.⁹⁷
- Move to carbon-neutrality – progress is too slow.⁹⁸
- Reduce emissions and the environmental impact of the agricultural sector, especially the dairy industry.

⁹⁶ NZEI Te Riu Roa (2021) Unpublished. The analysis was based on the following Ministry of Education data: <https://www.educationcounts.govt.nz/statistics/6028> The ethnicity data of the rolls of the schools listed in the NIWA data were compared against national student averages.

⁹⁷ The Climate Change Commission's very recent first advice to the government on the Emissions Trading Scheme said that there is a risk not enough is being done to drive down gross emissions, putting NZ at a comparative disadvantage and costs onto future generations, and that Tiriti o Waitangi obligations must be addressed.

He Pou a Rangi the Climate Change Commission (2022). New advice on NZ ETS unit limits and price control settings, 27 July 2022 (Press release).

<https://www.climatecommission.govt.nz/news/new-advice-on-nz-ets-unit-limits-and-price-control-settings/https://www.climatecommission.govt.nz/our-work/advice-to-government-topic/nz-ets/our-advice-on-the-nz-ets/nz-ets-unit-limits-and-price-control-settings-for-2023-2027>

⁹⁸ The government is currently at risk of failing to meet its own target of a carbon neutral government sector by 2025 due to the inadequate speed of action on this front. 350 Aotearoa (2021) Government's increase to decarbonisation fund a disappointment, May 16 2021 (Press release). <https://350.org.nz/governments-increase-to-decarbonisation-fund-a-disappointment/>

- Raise awareness and educate, with active participation of schools, on climate change and environmental health - there is no comprehensive Climate Change Education strategy and no resources developed for Māori or Pacific communities on climate.^{99,100}
- Systematically take children's needs and views into account in developing policies and programmes addressing climate change.
- Collect and report data on the impact of climate change on children, with particular attention to involving children who stand to be impacted by climate change the most - Māori, Pacific, low-income, and disabled children.
- Contribute to bilateral, multilateral, regional and international cooperation to minimise and respond to the climate and environmental crisis.
- Monitor, analyse, and publish disaggregated data for climate wellbeing measures to children
- Aotearoa must ensure that in its mitigation and adaptation planning, it takes the rights of all children into account, including disabled children.
- Aotearoa must make substantial progress to reduce car reliance and improve transport infrastructure in a way that enhances opportunities for active transport for everyone.
- Aotearoa must take ambitious action on agricultural emissions. Inclusion of agriculture in the emissions trading scheme is a necessary step in addressing climate change and ensuring the rights of children to a healthy future.
- Aotearoa must develop and implement a national, multisectoral food strategy/strategies based on Te Tiriti o Waitangi that brings a wellbeing focus to food systems to address rising food insecurity, promote food sovereignty, and address childhood malnutrition and its significant effects across the lifecycle.
- Aotearoa must not regress further on areas of nutrition and public health and must take concrete steps to improve food environments and address underlying determinants of poor diet.

⁹⁹ Currently there is no comprehensive Climate Change Education strategy for all ages and stages of education. See the NZEI Te Riu Roa submission to the draft Emissions Reduction Plan consultation here: <https://bit.ly/3DsF8bh>. There is also no comprehensive plan for adult education on climate change, placing the burden further on children. This could be funded from the Climate Emergency Response Fund and run out of the proposed Climate Information Centre (which could be renamed the Climate Education and Engagement Centre). Importantly, there are no resources developed for Māori or Pacific communities on climate. Many iwi have their own climate plans now, but many Māori will not be exposed to these plans.

¹⁰⁰ The New Zealand curriculum is currently being reviewed, providing an opportunity to improve climate change education. Professional development for teachers and supporting schools to have specialist environmental science teachers would also enhance climate change education.

Recommendations

The Committee may want to consider making the following recommendations to the Government:

- **Use a children’s rights approach¹⁰¹ to develop, implement, monitor and evaluate climate change policies, paying particular attention to the rights of tamariki Māori, Pacific children, disabled children, and children living in low-income settings.**
 - **Appoint a children’s advocate to the Climate Change Commission.**
 - **Assess the agricultural sector’s impacts (especially pollution and greenhouse gas emissions) on children’s rights and use a children’s rights approach to supporting shifts in modes of production where necessary.**
 - **Ensure national emissions reductions plans and targets explicitly protect the rights of tamariki Māori and all children. Child advocates should be resourced to bring an intergenerational perspective and imperative to climate action at policy levels, especially at the Climate Change Commission.**
 - **Strengthen climate change education for children by integrating environment and climate change issues into the national curriculum, supporting the professional development of teachers, and developing resources for Māori and Pacific communities on climate.**
 - **Collect disaggregated data to monitor the impact of climate change on children.**
 - **Give special attention to Aotearoa’s obligations to children in Tokelau, and ensure a focus on children and their rights in contributions to bilateral, multilateral, regional and international cooperation to mitigate and adapt to the effects of climate change, paying particular attention to Aotearoa’s obligations to children in Tokelau.**
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¹⁰¹ Consistent with te Tiriti o Waitangi, the CRC and other relevant international human rights obligations