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SAFE DRINKING WATER IN NEW ZEALAND: THE VALUE OF A HUMAN RIGHTS PERSPECTIVE

LLM RESEARCH PAPER

LAWS 539: LAW OF FRESHWATER RESOURCES

FACULTY OF LAW

VICTORIA UNIVERSITY OF WELLINGTON
TE HERENGA WAKA

2020

Contents

Abstract

This paper discusses the state of New Zealand's drinking water and looks to a human rights perspective. A purely human rights framework drinking water is not necessarily the best fit for New Zealand's unique cultural and environmental landscape. A human rights perspective does add value. There are useful concepts in human rights discourse which can be used to guide the approach to drinking water regulation.

Word length

The text of this paper (excluding table of contents, abstract, footnotes and bibliography) comprises approximately 7,492 words.

Subjects and Topics

Human Rights-Drinking Water; or
Environment-Human Right to Water.

I Summary

"Water is the essence of life.[1]" Clean and safe drinking water is essential to the enjoyment of human life. This has been recognised internationally through multiple articulations of a human right to water and sanitation. In 2010, the United Nations General Assembly passed Resolution 64/292 which recognised that water and sanitation are essential to realising all human rights.[2]

New Zealanders have an expectation that the water flowing from their taps is clean and safe to drink. There are risks of contamination and failure at any stage in the drinking water network can lead to serious illness. In 2016 there was a bacterial outbreak in Havelock North causing widespread illness which "shook public confidence in this fundamental service"[3]. The Government Inquiry into Havelock North Drinking Water recommended changes to strengthen legislation and standards for drinking water and an independent water regulator.[4] The Inquiry made comprehensive recommendations to overhaul the regulation of New Zealand's drinking water but did not mention water as a human right.

There is no need for New Zealand to have a distinct human right to water recognised in its primary human rights legislation, the Human Rights Act 1993. Elements of the human right to water can be met through water legislation providing regulatory framework to ensure access to safe and clean water. There is value in using right to water elements to test whether domestic water framework is suitable, however, New Zealand needs a bespoke water management framework to fit New Zealand's environmental and cultural context. Water management must be sustainable so there can be clean and safe drinking water for current and future generations.

II Introduction

This paper is focussed on the human right to drinking water and water for domestic uses. The right to water entitles everyone to have access to sufficient, safe, acceptable, physically

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[1] OHCHR, UN Habitat, WHO *Fact sheet No. 35 The Right to Water* (United Nations, Geneva, August 2010) <www.ohchr.org> at 1.

[2] UN General Assembly: Resolution A/RES/64/292 (July 2010) at [1].

[3] Government Inquiry into Havelock North Drinking Water *Report of the Havelock North Drinking Water Inquiry: Stage 1* (Auckland, May 2017) <www.dia.govt.nz> at [1].

[4] Government Inquiry into Havelock North Drinking Water *Report of the Havelock North Drinking Water Inquiry: Stage 2* (Auckland, December 2017) <www.dia.govt.nz>.

accessible and affordable water.[5] Firstly, the threats to the quality of New Zealand's drinking water are outlined. Secondly, the background to the human right to water and the current state of the right is discussed. Thirdly, New Zealand's current drinking water framework and the planned changes are discussed. It will then look at drinking water management in New Zealand and the barriers to meeting the elements of the human right to water. Lastly, it will discuss the value of human rights discourse for ensuring New Zealand's water is safe to drink.

III Background

A Where does New Zealand's drinking water come from?

New Zealand has an abundance of drinking water sources, but this is not to be taken for granted. New Zealand's drinking water is sourced from groundwater (53 percent), rivers and lakes (26 percent), and rainwater.[6] Rivers, lakes, wetlands and groundwater are parts of an interconnected freshwater ecosystem.[7] Groundwater consists of pockets of water between rocks, gravel, silt and sand or aquifers which are large deeper reservoirs of water. Groundwater is replenished by rainwater or water seeping from lakes and rivers.[8] Water comes to the surface either through springs, wells or bores and enters the supply system where it may be treated before being piped to users. Large suppliers take water from multiple sources[9] and process it through treatment plants to ensure it is safe to drink. New Zealand has 490 registered network supplies which serve more than 100 people.[10] The security of water sources is becoming increasingly vulnerable to threats.

B Threats to drinking water safety

> Many of our rivers, lakes, and groundwaters have unnaturally high levels of nutrients, chemicals, disease-causing pathogens, and sediment. Pollution degrades the health, mauri,

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[5] Committee on Economic, Social and Cultural Rights *General Comment No. 15* 29th session, E/C.12/2002/11 (20 January 2003).

[6] Mike Joy "NZ's polluted waterways threaten our health" (Newsroom, 8 May 2020) <www.newsroom.co.nz>.

[7] Ministry for the Environment & Stats NZ New Zealand's *Environmental Reporting Series: Our freshwater 2020* (April 2020) <www.mfe.govt.nz> and <www.stats.govt.nz> at 29.

[8] Above at 60.

[9] Auckland's water comes from •storage dams in the Hūnua and Waitākere ranges, •an aquifer in Onehunga and the Waikato River. *Where your water comes from* <www.watercare.co.nz>.

[10] Ministry of Health *Annual Report on Drinking-water Quality 2018-2019* (Wellington, 2020) <www.health.govt.nz> at 1.

> and wairua of waterways and can make our water unsafe for drinking, recreation, food gathering, and cultural activities.[11]

Health risks arising from poor water quality are of high risk as identified following the Havelock North outbreak. The Ministry for the Environment has identified knowledge gaps in understanding the cumulative effects a "mosaic" of land uses has on water quality. Across New Zealand there are variations in landforms, climates and land uses which makes effects on water difficult to understand and manage. The natural conditions of almost all water sources have changed due to human activity.[12]

There are multiple threats to the safety of New Zealand's water. The main waterborne illnesses in New Zealand are campylobacteriosis, salmonellosis, shigellosis, yersiniosis, E. coli infection, giardiasis, and cryptosporidiosis.[13] Bacterial pathogens can cause acute illness and are of significant risk to vulnerable people such as the immunosuppressed, elderly and infants. The presence of E.coli identifies the risk of campylobacterial infection. E.coli in water indicates contamination from faeces which can occur before or after treatment.[14] Giardia and Cryptosporidium are harmful protozoa which can live in the gut of humans causing illness even at low levels.[15] Scientists from Massey University have identified campylobacter, E.coli, cryptosporidium and giardia in high numbers in 16 surveyed waterways which supply drinking water. The highest risk was identified in areas with high rainfall, saturated soil and over 35% of the surrounding land used for agriculture.[16] Protozoa increased in the 1990s in New Zealand and are often found in water near intensive livestock farming.[17] The best treatment for protozoa is UV light as it is not always inactivated by chlorine which treats bacteria in water.[18]

In August 2016, there was an outbreak of gastroenteritis due to campylobacteria in Havelock North. Around 5,500 out of 14,000 people became ill.[19] The Inquiry found failures of multiple parties to ensure high levels of care to protect public health; a failed

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[11] Ministry for the Environment and Stats NZ, above n 7, at 29.

[12] Above at 30.

[13] Above at 46.

[14] Ministry of Health, above n 10, at 19.

[15] Above at 21.

[16] Bernard Phiri et al. "Does land use affect pathogen presence in New Zealand drinking water supplies?" (2020) 185 Water Research.

[17] Government Inquiry into Havelock North Drinking Water, above n 3, at [192]-[193].

[18] Above at [199].

[19] Above at [1].

regulatory system allowed the outbreak to happen.[20] The outbreak had an estimated total cost of $21 million due to inconvenience to households who had to boil or buy water, time off work or closed business for people who were ill and local and central government costs for investigation and remediation work.[21] The water in Havelock North was not treated with UV light prior to the outbreak.[22] Water safety concerns are not just isolated outbreaks, at least 34,000 New Zealanders become ill from drinking tap water every year and many communities around the country cannot drink their water without first boiling it.[23] Minister of Local Government Nanaia Mahuta said: "New Zealanders in all our communities have every right to turn on the tap and drink the water in the knowledge that it is safe."[24]

As well as established threats, the Ministry for the Environment is concerned about 'emerging contaminants', non-natural chemicals where little is known about the effects on human health. There are no health limits for domestic and industrial chemical compounds that may enter groundwater.[25] An example is poly-fluoroalkyl substances (PFAS) used as firefighting foam which has been subject to investigation after being found in groundwater.[26] Microplastics in water also raise concern as the concentration and risks to human health and ecosystems are not yet known.[27] Nitrate levels are also becoming of concern as contaminant levels are on the rise in groundwater, rivers and lakes. Dr Mike Joy has raised concerns that the maximum acceptable values of nitrate levels in New Zealand are dangerously high and fail to take into account emerging research on the link between nitrates and colorectal cancers.[28]

C Threats to water availability

A human right to water is more than just water quality, there are other key components of availability and accessibility which New Zealand will need to safeguard against due to climate change threats. In 2017/2018 domestic use of water made up 17% of all allocated water. National data showing increased domestic water use is not known, however, with a

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[20] *The Water Services Regulator Bill - Taumata Arowai a milestone for drinking water safety* Press Release Hon Nanaia Mahuta, (12 December 2019) <www.beehive.govt.nz>.

[21] D Moore, R Drew, P Davies and R Rippon. *The Economic Costs of the Havelock North August 2016 Waterborne Disease Outbreak* (August 2017, Wellington, Sapere Research Group Ltd.) at viii.

[22] Government Inquiry into Havelock North Drinking Water, above n 3, at [199].

[23] *Major investment in safe drinking water* Press Release, Rt Hon Jacinda Ardern and Hon Nanaia Mahuta (8 July 2020) <www.beehive.govt.nz>.

[24] Above.

[25] Ministry for the Environment and Stats NZ, above n 7, at 40.

[26] Above at 47.

[27] Above at 49.

[28] Joy, above n 6.

rising population it is likely that domestic water use will grow.[29] It seems like New Zealand has an abundance of freshwater given its natural features and small population but this is no reason for complacence. Over-extraction of water risks lowering the water table an in coastal areas, aquifers can be contaminated by seawater.[30] The effects of climate change such as rising seas and changes in rainfall may also damage New Zealand's water supplies.

IV The human right to water and sanitation

A Development

The human right to water and sanitation is still developing at international, regional and nation levels. There is no absolute right that is legally binding upon states at an international level. The idea of a right to water was first discussed in the 1970s[31] and evolved from an environmental protection perspective to an entitlement for individuals.

1 General Comment No. 15

In 2002, the Committee on Economic, Social and Cultural Rights made General Comment No. 15 which set out the elements for a standalone human right to water without creating a new right.[32] At its core, "the human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses.[33]" There are three substantial principles: availability, quality and accessibility.[34] Availability means a sufficient and continuous supply for every person for "drinking, personal sanitation, washing of clothes, food preparation, personal and household hygiene". The amount can be found in WHO guidelines[35] and may vary according to individual health, cultural needs or

[29] Ministry for the Environment and Stats NZ, above n 7, at 57.

[30] Above at 60. The example given is in the Waimea Plains in Nelson in 2001 two bores had to be shut down due to contamination from seawater.

[31] The 1977 UN Water Conference in Mar del Plata was an early formation of a rights-based framework for a right for all people to have access to drinking water to meet basic needs. *Report of the United Nations Water Conference,* Mar del Plata, 14–25 March 1977.

[32] General Comment No. 15, above n 5.

[33] Above at [2].

[34] Above at [12].

[35] According to WHO, between 50 and 100 litres of water per person per day are needed to ensure that most basic needs are met and few health concerns arise. Access to 20-25 litres per person per day represents a minimum, but this amount raises health concerns because it is insufficient to meet basic hygiene and consumption requirements.
WHO Fact sheet No. 35 The Right to Water, above n 1, at 8.

environmental conditions.[36] Quality means free from micro-organisms and chemical substances that threaten health. Water should also be of acceptable colour, odour and taste.[37] Accessibility has four elements. Physical accessibility so that water services should be within or within the immediate vicinity of households, educational institutions and workplaces. Economic accessibility so that water, water services and facilities are affordable for all and must not compromise other basic rights. Access must be non-discriminatory so that everyone, including the most vulnerable or marginalised people can access water. Information accessibility is the right to seek, receive and impart information on water.[38]

General Comment No. 15 provided an interpretation of established human rights to include water, such as rights to an adequate standard of living including food, clothing and housing and the highest obtainable standard of health.[39] This approach has been criticised for not placing water as a right in itself, for example Misiedjan favours a standalone right rather than water as a sub-category of other rights.[40] Regardless of the source of the right, the core criteria provide useful basic criteria and can be used to analyse New Zealand's drinking water framework.

2 2010 UNGA Resolution

In July 2010, the United Nations General Assembly made a resolution which recognised 'the right to safe and clean drinking water and sanitation as a human right that is essential for the full enjoyment of life and all human rights[41]". Not all states supported the Resolution. There were 122 votes in favour and 41 abstentions largely due to issued raised about transparency in the drafting. New Zealand abstained as it had not considered the implications of the resolution.[42] At the time there was a parallel process in the United Nations Human Rights Council which affirmed that a binding human right to water is derived from the right to adequate standard of living which arises from the ICESCR[43] and

[36] General Comment No.15, above n 5, at [12](a).

[37] Above at [12](b).

[38] Above at [12](c).

[39] International Covenant on Economic, Social and Cultural Rights 1966, Articles 11 and 12.

[40] Daphina Misiedjan *Towards a Sustainable Human Right to Water* (online ed., Intersentia, 2019) at 65.

[41] Resolution A/RES/64/292, above n 2.

[42] Radio New Zealand "NZ abstains on UN water resolution" (29 July 2010) <www.rnz.co.nz>
"The Ministry of Foreign Affairs says New Zealand had not had time to fully consider the implication of the resolution".

[43] Article 11 of the ICESCR is the human right to an adequate standard of living, it does not mention water.

other treaties such as the Convention on the Rights on the Child.[44] Water is clearly necessary for life and an adequate standard of living.

The Special Rapporteur on the human rights to safe drinking water and sanitation has a role investigating the intersection of institutions with the physical water resources and infrastructure and the technology, services and political processes involved.[45] The current Special Rapporteur, Léo Heller, released a statement in July 2020 to mark the 10th anniversary of the Resolution. He believes there is cause for both hope and concern. Progress has been made in awareness that water is a human right, but a fast increase in efforts is required to fulfil it.[46] Heller's comments will be further discussed in this paper in relation to New Zealand.

3 Sustainable Development Goal 6

In 2015, the 2030 Sustainable Development Goals (SDGs) included access to water and sanitation for all as Goal 6 in a way that placed water within a wider sustainability focus. Target 6.1 is to achieve 'universal and equitable access to safe and affordable drinking water' by 2030.[47] While there has been work on developing indicators to measure state progress, there is still a view that despite the progress we need stronger performance indicators and further analysis of the role of politics and power imbalances.[48] New Zealand has published a voluntary review of its progress on the SDGs.[49] New Zealand has high ambitions to improve freshwater quality beyond the requirements of Goal 6. The review identifies the biggest challenge as reducing pollution from farming activities and urban land use.[50] One of the identified main risks is inequalities between rural and urban drinking water supplies as rural suppliers are less likely to meet Drinking Water Standards.[51] Heller stated that the international community is "far from being on track" to meet the 2030 goal.

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[44] Misiedjan, above n 40, at 80.

[45] Emanuele Fantini "An introduction to the human right to water: Law, politics, and beyond" WIREs Water 2020;7:e1405 at 2.

[46] Léo Heller "10th anniversary of the recognition of water and sanitation as a human right by the General Assembly Statement by the Special Rapporteur on the human rights to safe drinking water and sanitation" (United Nations, 28 July 2020) <www.ohchr.org>.

[47] UN General Assembly: Transforming Our World: The 2030 Agenda for Sustainable Development. UN Doc; A/RES/70/1, 21 October: 2015.

[48] Fantitni, above n 45, at 3.

[49] Ministry of Foreign Affairs and Trade *He Waka Eke Noa Towards a Better Future, Together New Zealand's Progress Towards the SDGs – 2019* (July 2019) <www.mfat.govt.nz>.

[50] Above at 49.

[51] Above at 50.

Water is not at the forefront of global human rights concerns. The biggest barriers Heller identified are lack of resources, complex political factors and economic interests.[52] While New Zealand largely already meets the Goal 6 targets, there are concerns about equality of access to safe drinking water.

B What does the human right to water mean today?

Despite multiple articulations of a human right to water, it is still unclear what it means for states and what value it adds for individuals. It is not a binding human right setting obligations on parties to a treaty. Some states have incorporated a human right to water in domestic law[53] but there is no consistent and widespread application over a sufficient duration to become customary international law. States are diverse, so an identical right may not be suitable due to cultural, environmental, regional and transboundary contexts.[54] Statements and declarations are not enough to create standalone binding right. Fantini identifies three main debates that remain: defining the scope of the content of the right and indicators to monitor it; whether human rights is appropriate and effective to counter privatisation; and whether the human right to water needs to be decolonised and decentred from a western individualistic and anthropocentric view.[55] These issues will be discussed in a New Zealand context.

A human right to water can be framed as obligations not to interfere with water availability, access and quality through actions such as unjustified disconnections, pollution, diversions or depletions of water that endangers the domestic supply.[56] Water does not need to be provided by the state (above what is necessary to sustain life) and it does not need to be free of charge to comply with human rights, it must only be affordable.[57] The role of the state is generally to provide regulation and framework to facilitate access to drinking water and ensure that third parties do not cause harm to drinking water.[58] It is a progressive right, so it does not require immediate implementation.[59] The right is to be implemented progressively within a state's available resources. As McCaffrey notes there is no "light

[52] Heller, above n 46.

[53] South Africa and India are examples.

[54] Misiedjan, above n 40, at 73.

[55] Fantini, above n 45.

[56] WHO Fact sheet No. 35, above n 1, at 7.

[57] The UNDP suggests 3 per cent of household income as a benchmark. Above at 11.

[58] Inga T. Winkler "The Human Right to Water" in A Rieu-Clarke, A Allan and S Hendry (eds) *Handbook on Water Law and Policy* (Routledge, 2017) at 112.

[59] Stephen C McCaffrey, "The Human Right to Water: A False Promise" (2016) 47:2 McGeorge L Rev 221 at 228.

switch you can flick" to fix water issues and that this is not just an issue for the developing world, some of the world's richest countries have problems ensuring access to safe drinking water.[60] New Zealand is not immune as demonstrated in the Havelock North outbreak.

Gawelab and Bretschneidera have looked at the human right to water from the perspective of assessing the access hurdles to find areas for improvement. They reference the Sustainable Development Goals and provide a new framework based on economics and water resource management. The three pillars of sustainable development are social, economic and ecological.[61] To ensure a long term right to water, resources must be sustainably protected and there must be investment in infrastructure to ensure efficiency. They categorise hurdles as spatial (distance between the supply and the user), temporal (delays accessing water or periods of unavailability), qualitative (if water requires treatment such as boiling or if users drink contaminated water) and pecuniary problems.[62] Once hurdles are identified, they then give three assessment criteria: functionality, reasonableness and non-discrimination.[63] Hurdles do not need to be eliminated, some hurdles may be required for the whole water system to function. A reasonable hurdle is one that a household can overcome within their means and dignity. There must not be arbitrary differences between the hurdles users face.[64] The 2016 Havelock North incident was an example of a qualitative hurdle. The Inquiry identified wider problems with the management of water across New Zealand. The incident risked undermining public confidence in local drinking water supplies.

Different language has been used to describe the right to water. Different approaches show, as Midiedjan puts it, "a cross-fertilisation between international environmental policy and human rights[65]". A human rights framework needs to acknowledge that needs can vary according to climate, geography and individual health needs.[66] Discussion of the right to water is for domestic use only. Protection of domestic water does not necessarily mean unlimited volume. Luxury household uses are not protected by human rights. Water allocations for agriculture and food production are outside of the human right to water

[60] McCaffrey, above n 59, at 230.

[61] Erik Gawelab and Wolfgang Bretschneidera, "Specification of a human right to water: a sustainability assessment of access hurdles" (2017) 42:5 Water International 505 at 506.

[62] Above at 511.

[63] Above at 515.

[64] Above at 516.

[65] Misiedjan, above n 40, at 54.

[66] Winkler, above n 58, at 110.

discourse.[67] Allocation for other uses will affect drinking water when discussing prioritisation, as those uses may be diverting drinking water allocations or contributing to water pollution.

V New Zealand's drinking water framework

New Zealand has a multi barrier approach to drinking water management.[68] Outbreaks of contaminated water leading to illness can only occur if there are multiple system failures, if one barrier fails then the others should remain in place.[69] This approach cannot lead to complacency and reliance on other barriers, or water quality can be put at risk. Water management can be divided into three parts.[70] The protection of sources of water in the natural environment is part one. The Ministry for the Environment and regional councils have responsibilities under the Resource Management Act 1991. Part two is the suppliers of water who extract the water and carry out storage, treatment, monitoring. District Councils have responsibility under the Local Government Act and Part 2A of the Health Act 1956. Part three is the role of the Ministry of Health and District Health Boards in promoting public health. Requirements under Building Act 2004 for after the water enters private property is not discussed in this paper.

A Protection of sources under the Resource Management Act 1991

The primary legislation for water is the Resource Management Act 1991 (RMA) as it governs use, source quality and discharges into water and sets the responsibilities for Regional Councils. Resource consents can be granted to take, use, dam, divert or discharge into any water.[71] No consent is required for domestic water use. Commercial allocations can be consented for up to 35 years.[72] The RMA does not provide special protection for aquifers and groundwater. Consented activity can have an impact on the drinking water supply through discharges or depletion. Central government sets guidelines for councils through the National Policy Statement for Freshwater Management.[73]

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[67] Fantini, above n 45, at 2.

[68] Government Inquiry into Havelock North Drinking Water, above n 3, at [113].

[69] Above at [116].

[70] Ministry of Health *Drinking-water legislation* <www.health.govt.nz>.

[71] Resource Management Act 1991, s 354.

[72] Resource Management Act 1991, s 123.

[73] Released in 2014, updated 2017.

National Environmental Standards (NES)[74] set requirements for protecting sources from contamination prior to any treatment. Starting with source protection is part of the multi-barrier approach. Regional councils must not grant water permits or discharge permits for activities that are likely to lead to water not meeting health quality criteria or aesthetic values.[75] Regional plans cannot include rules that allow such activity.[76] Effects on water quality must also be considered by consenting authorities in determining resource consent applications.[77] The NES incorporates water quality values set by the Drinking-water Standards.

B The Health Act 1956 and duties of suppliers

The Health Act 1956 currently governs the supply of drinking water. It defines human right to water concepts such as adequate supply, adverse aesthetic effect and contamination.[78] Suppliers have obligations under the Heath Act to take reasonable steps to ensure they provide adequate water of a quality complying with the Drinking-water Standards (DWS), and to protect sources and they must develop and implement water safety plans for supplies serving more than 500 people. Drinking-water assessors are appointed to monitor compliance and records of compliance must be kept and published. There were changes to the Act in 2019 to strengthen requirements for suppliers to comply with the DWS, changes to the definition of all practicable steps to give equal weight to all relevant circumstances and removal of the requirement for changes to the DWS to undergo a three-year consultation.[79]

Drinking-water Standards (DWS) are issued under Part 2A of the Health Act to set requirements for drinking water safety, maximum amounts of organisms of substances that can be in water, testing criteria, remedial actions and record keeping.[80] Drinking-water suppliers must ensure that the drinking water they supply complies with DWS.[81] The current DWS was amended in 2018 following the Government Inquiry into the Havelock North Drinking-Water Outbreak. The new DWS came into force in March 2018, part-way through the 2018-2019 reporting year. The changes include a requirement to monitor

[74] Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007.

[75] Above, reg 7, 8.

[76] Above, reg 10.

[77] Above, reg 12.

[78] Health Act 1956, s 69G.

[79] Health (Drinking Water) Amendment Act 2019.

[80] Health Act 1956, s 69O.

[81] Above, s 69V.

coliforms which are a useful indicator of abnormalities and changes in water and can indicate a need for further testing.[82] E.coli testing now must be for enumeration not just presence to improve the timeliness of responding to an outbreak.[83] In 2018-2019, out of 490 supplies that supply over 100 people, 76.2% of users received water that met all the DWS. 95.3% met bacteriological standards, 78.7% met the protozoal standards and 97.5% met the chemical standards.[84] The risks are much greater for small supplies than large supplies, for example, only 64.4% of small supplies met the bacteriological standards.[85] Compliance with all parts of the DWS has improved since the previous year so there is hope that the reforms are having an impact. There is concern that small supplies may be left behind due to the increased costs of treatment for small populations.

Water safety plans (WSP) must be prepared by suppliers to identify public health risks, critical points of risk, and mechanisms for preventing risk or reducing and eliminating any risk that does arise.[86] WSP are aligned with WHO guidance to provide framework for assessing the safety of the whole supply chain from source to tap. In 2018-2019 a total of 17 supplies serving 44,300 people did not have a WSP.[87]

Local government organisations that provide water services must not restrict or stop the supply of water.[88] While local authorities may contract out supply of water services, the local authority remains legally responsible for the provision of water.[89] Water outages are permissible under the Health Act for periods under 8 hours, for planned works or in the event of an emergency.[90]

VI The Havelock North Inquiry

A Inquiry Stage 1 findings

Stage 1 of the Inquiry was concerned with what happened leading to the outbreak in Havelock North in August 2016. The outbreak was traced to two bores in the Te Mata

[82] Ministry of Health, above n 10, at 4.
[83] Above at 5.
[84] Above at 16.
[85] Above at 18.
[86] Health Act 1956, s 69Z.
[87] Ministry of Health, above n 10, at 7-11.
[88] Local Government Act 2002, s 130.
[89] Above, s 136(2).
[90] Health Act 1956, s 69S.

aquifer just outside of Havelock North.[91] The Hastings District Council had thought the aquifer was secure so the water entered the system untreated.[92] The safety of water from aquifers depends on security from contaminants and suppliers being aware of risks. It was found likely that sheep faeces entered the aquifer due to heavy rainfall causing contaminated water to flow from paddocks into a pond near a bore.[93] A series of failures lead to the outbreak, including failures by the Regional and District Councils. The Regional Council failed to meet source protection duties under the RMA and did not have adequate knowledge of the risks to have prevented the contamination.[94] The District Council as the drinking water supplier failed to have a high standard of care in assessing the risks to the drinking water supply and breached the DWS.[95] The District Council managers did not adequately supervise delegated tasks, their Water Safety Plan was delayed, record keeping and equipment maintenance was poor and there was a failure to have an emergency response plan.[96] Lessons had not been learnt following a similar campylobacteria outbreak in 1998.[97] The Inquiry referred to the "swiss cheese" model of regulatory failure by Professor James Reason.[98] An accident can occur when multiple failures create holes in a the layers of defence between hazards and vulnerable people so a multiple barrier approach is necessary to prevent failure slipping through and causing harm.

Cooperation between the Regional and District Councils was found lacking and was described as "dysfunctional" in the time immediately after the outbreak.[99] The Regional Council should not have granted permits for activities which could adversely affect drinking water supplies from the aquifer. The District Council had been granted a permit from the Regional Council to extract the water, the Regional Council could have imposed and monitored conditions to ensure adequate management of uncapped bores.[100] The Regional Council prosecuted the District Council but withdrew and issued an infringement notice under the RMA for failure to comply with a condition of its water take permit which was to maintain the bores to the required standard.[101] Enforcement is difficult as proving

[91] Government Inquiry into Havelock North Drinking Water, above n 3, at [2].
[92] Above at [4].
[93] Above at [10].
[94] Above.
[95] Above.
[96] Above.
[97] Above at [14].
[98] Above at [237].
[99] Above at [127].
[100] Above at [130]-[133].
[101] Above at [72].

any failures beyond reasonable doubt prove in criminal proceedings requires a high certainty of expert evidence.[102] Realising the human right to water requires a competent regulatory system and accountability.

B Inquiry Stage 2 findings

The Inquiry made urgent short term and longer term recommendations with the overarching principle that there must be a high standard of care and diligence.[103] The care required in the supply of water should be no different to other industries where peoples health and lives are put at risk such as medicine and aviation especially as water quality affects all individuals, communities and businesses.[104] Unsafe water can threaten life and can cause long term adverse effects on health especially for the most vulnerable people in our society. The Inquiry looked beyond the Havelock North outbreak to the wider problems New Zealand's water is facing and heard evidence on the increasing risks. Sources and infrastructure will be at risk from climate change effects such as storms, droughts and higher temperatures.[105] Intensive farming was noted as increasing the risks to sources from faecal matter, pathogens, fertiliser run off and nitrates.[106] A growing population, increased pollution from urban areas will also add strain to drinking water supplies.[107] The Inquiry's recommendations centred around six internationally recognised principles which were developed by World Health Organisation microbial pathogen experts based on the idea that water supplies are inherently vulnerable.[108] The principles are now reflected in the DWS:[109]

A high standard of care must be embraced

Everyone involved in the supply of water must take a high standard of care. The consequences of failure are significant for public health and safety. Vigilance, diligence and competence should be minimum requirements and there is no place for complacency.

Protection of source water is of paramount importance

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[102] Above at [74].

[103] Government Inquiry into Havelock North Drinking Water, above n 4, at [16].

[104] Above at [20].

[105] Above at [64].

[106] Above at [65].

[107] Above at [66].

[108] Above at [26] to [31].

[109] Above at [31] and Ministry of Health *Drinking-water Standards for New Zealand 2005 (revised 2018)* (2018, Wellington: Ministry of Health).

This is the first and the most significant barrier. Risks to sources must be well understood and appropriately managed. It is understood that source protection will not be perfect and can fail so further barriers are needed to ensure drinking water safety.

Maintain multiple barriers against contamination

As no one barrier alone can completely ensure water safety, there must be multiple layers of protection. A "source to tap" approach ensures source protection, effective treatment, secure distribution, effective monitoring and responses to problems. Maintaining barriers is crucial to ensuring contamination does not get through to consumers.

Change precedes contamination

Contamination events are usually preceded by sudden changes in water quality caused by environmental conditions. Heavy rainfall, flooding or earthquakes should lead to extra monitoring of source water and water infrastructure for contamination.[110] Groundwater is dynamic and the quality can change from stress.[111] Change caused by human activity such as changes in equipment, power outages or systemic change in water management should also require heightened awareness.

Suppliers must own the safety of drinking water

The suppliers need to be set up to be capable of ensuring water safety. Personel must be knowledgeable, experienced and committed to water safety. Suppliers need systems to enable quick responses to problems. There must be accountability at all levels of the supplier agencies.

Preventative risk management approach

The focus of water safety must first be on prevention of contamination because it is harder to respond after an event when people have already become ill. There needs to be systematic risk assessments for all stages from source to tap, identifies ways to manage risks and specific controls to implement.

The Inquiry made recommendations which it stated would substantially improve drinking water for all New Zealand. The promulgation of the principles of drinking water safety was the first recommendation.[112] There were 19 identified urgent recommendations and a

[110] Above at [36].

[111] Above at [38].

[112] Above at [919].

further 51 long-term recommendations.[113] The Stage 2 Report made damning findings of widespread systematic failure of water suppliers to meet the DWS across New Zealand. The Ministry of Health was not adequately holding suppliers to account.[114] While the Inquiry never mentioned a human right to water, it is clear from their findings that it was not being met. The changes recommended by the Inquiry will go towards ensuring that the human right to water is met from a water quality perspective. It is concerning that prior to the Inquiry there was no prioritisation of fixing the regulation of New Zealand's drinking water to meet SGD6.

VII Changes to water regulation

A Taumata Arowai – A new drinking water regulator

The Inquiry recommended a dedicated drinking water regulator with a primary focus on drinking water safety, properly resourced with expertise and competence.[115] In September 2019, cabinet announced an intention to create a new water services regulator following the recommendation of the Government Inquiry into the Havelock North Drinking Water and the Government's Three Waters Review. The aim of a new regulator is to strengthen compliance, monitoring and enforcement mechanisms, supporting suppliers to manage risks and protecting sources so that New Zealander's can drink safe water.[116] Taumata Arowai–the Water Services Regulator Act 2020 received assent on 6 August 2020 and comes into force either after 15 months or at an earlier appointed date. It establishes a new water regulator and provides for its objectives, functions, and governance arrangements. The Special Rapporteur mentioned the need for states to have autonomous regulators to ensure water supplies are meeting human rights. He acknowledged that creation of an independent regulatory body is underway in New Zealand, Qatar and Punjab, India among others. He stated: "The expectation is that those institutions will effectively regulate services through the human rights framework.[117]"

B Water Services Bill

On 28 Jul 2020, the Water Services Bill was introduced. The Bill intends to repeal Part 2A of the Health Act 1956 and once it is in force Taumata Arowai will take over the regulator

[113] Above at Parts 23 and 24.

[114] Above at [923]-[925].

[115] Above at [453].

[116] Department of Internal Affairs *Taumata Arowai Establishment Unit* <www.dia.govt.nz>.

[117] Heller, above n 46.

function. The Bill attempts to address equality issues by extending the duties of suppliers to small suppliers. The approach provides mechanisms "proportionate to the scale, complexity, and risk profile of a supply, from large, capable suppliers through to small suppliers such as marae or rural suppliers.[118]" While the Bill includes some fundamental elements of the human right to water to meet the principles of availability, quality and accessibility, it does not explicitly state that a human right to water exists in New Zealand. In 2012, the Human Rights Commission identified the problem of having no single agency in charge of water regulation and the myriad of legislation and policy documents.[119] Both Taumata Arowai and the Water Services Bill are significant steps towards meeting the accountability aspect of the right to water, but time will tell whether water is regulated through a human rights framework.

VIII Is New Zealand meeting a human right to water?

Water availability and water quality are potential areas for failure. Droughts, rainfall variations and climate change impacts can cause water shortages. The Human Rights Commission (HRC) published a paper in support of a human rights approach to water in 2012.[120] The HRC considered the main relevant criteria to New Zealand to be availability, quality and safety, affordability, acceptability in relation to Māori values, participation of citizens and accountability.[121] As most households are dependant on local council suppliers, the availability and quality of their water may vary depending on infrastructure and service quality.[122] The HRC promotes the values of respect, protection and fulfilment in regard to the state's duties.[123] Government must not interfere with access to water, must prevent third parties interfering with access to water and must make sure everyone can enjoy water equally. New Zealand is making efforts to tighten and reform the regulation of drinking water which should ensure the elements of the human right to water are met. Taumata Arowai will be the independent regulator which protects and promotes drinking water safety including source protection. It has a big role to play in considering the present and future threats to water availability and quality.

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[118] Water Services Bill, Explanatory Note.

[119] Human Rights Commission *Human Rights and Water Tika Tangata me te Wai* (February 2012, Auckland) <www.hrc.co.nz> Human Rights Commission, at 26.

[120] Above.

[121] Above at 7.

[122] Above at 12.

[123] Above at 25.

Freshwater in New Zealand is unevenly distributed or managed. Regional control leads to variations in quality and disparity between rural and urban areas. New Zealand has a traditional regulatory approach to water management rather than a human rights or environment centred approach.[124] The current weaknesses in New Zealand's water law are inconsistencies arising from regional control.[125] There are risks of leaving smaller and rural communities behind as economies of scale lead to better investment in urban water infrastructure. New Zealanders should have access to water of an equal quality no matter where they live.

Accountability is a key aspect of a human rights framework. Government or private providers of water and water services must be held to standards. Third parties who interfere with drinking water though pollution or diversion of water must also be held to account. Meeting the human right to water requires water reform with all the relevant criteria in mind. Water law and policy does not need to explicitly mention human rights or to comply with any particular international declaration to ensure drinking water needs are adequately met. Recognition of the human right alone is meaningless if it is not supported by domestic law reform and an adequately resourced regulator to implement the relevant principles. Human rights are not exact solutions that fit all countries. Winkler notes that states may choose their own water solutions but must reflect human rights principles.[126]

IX Is a human right to water appropriate for New Zealand?

A Te Mana o te Wai

Water facilities and services must be culturally appropriate.[127] The human right to water and human rights discourse is generally based on western ideology which is individualistic and anthropocentric. While promotion of universal values for drinking water encourages equality across all cultures, there are dynamic and situational beliefs about the distribution of water to be considered.[128] Indigenous world views do not always put humans at the

[124] Isabelle Smith, "Exporting Nature's Gift: An Analysis of Contemporary Water Law Issues in Aotearoa New Zealand" (2019) 32:1 Geo Intl EnvtI L Rev 85 at 94.

[125] The introduction to the Water Services Bill states: "There is a lack of compliance and enforcement activity, and significant variability in the size and capability of suppliers, with little support to assist them to comply with regulatory requirements. There has been a lack of Māori input within decision-making frameworks. As a result, the current drinking water regulatory system is failing to provide necessary assurances that drinking water supplies across New Zealand are safe and reliable."

[126] Winkler, above n 58, at 117.

[127] General Comment No.15, above n 5, at [12](c)(i).

[128] Fantini, above n 45, at 4.

centre of all things, rather placing humans within the wider ecosystem with a guardianship or metaphysical sovereignty over natural resources. State control of water resources may be incompatible with indigenous guardianship.

In the Māori world, water is considered to have mauri or a lifeforce from the pure freshwater wai ora to the wamate or dead water at the end of the lifecycle.[129] Māori derive identity from water ecosystems and consider water a taonga.[130] New Zealand's water management is currently based on inherited English common law principles and the Crown's position that no-one "owns" fresh water. The Crown exercises statutory power to manage water. Māori rights and interests in freshwater have not been addressed by the Crown; any changes to the system must address and recognise interests through active engagement, consultation and partnership. It is not clear whether Māori are owners, partners or stakeholders in water governance, the HRC believes this needs to be addressed and that co-governance and co-management could achieve good governance outcomes.[131]

The National Policy Statement for Freshwater Management issued in 2014 provides the meaning of Te Mana o te Wai. Councils must consider and recognise it in water management.

> Te Mana o te Wai is a concept for freshwater that encompasses the integrated and holistic health and well-being of a water body. When Te Mana o te Wai is given effect, the water body will sustain the full range of environmental, social, cultural and economic values held by iwi and the community.[132]

The Taumata Arowai–the Water Services Regulator Act 2020 provides an objective of the new regulator to give effect to Te Mana o te Wai to the extent it applies to the regulator's functions and duties and establishes a Māori Advisory Group.[133] This will provide for a whole of system approach to water recognising tikanga and kaitiakitanga. The Water Services Bill requires that anyone with a power or duty under the Act must give effect to Te Mana o te Wai to the extent it applies.[134] Giving effect to Te Mana o te Wai still falls

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[129] Human Rights Commission, above n 119, at 21

[130] Louisa Wall "Māori Water Rights are Human Rights are NZ rights" (The Daily Blog, May 29 2016) <www.thedailyblog.co.nz>

[131] Human Rights Commission, above n 119, at 22

[132] Ministry for the Environment and Māori Crown Relations Unit. *Shared Interests in Freshwater: A New Approach to the Crown/Māori Relationship for Freshwater* (Wellington, 2018) <www.mfe.govt.nz> at 5.

[133] Taumata Arowai–the Water Services Regulator Act 2020, s 5.

[134] Water Services Bill, cl 14.

short of addressing ownership of water and it remains to be seen how it will be applied as a joint guardship role in practice.

B Sustainability

Water is essential to human life and other forms of life in the natural world. The needs of flora and fauna and needs of the water itself are often left out of the discussion. Sustainability is not always discussed in human rights. Future generations must not be harmed by the current generation's water use. There is a risk of overexploitation endangering ecosystems and damaging water sources if current human enjoyment is put before other life. A right to water is not a right to unlimited water so there can be restrictions in allocations to ensure sustainability and protection of nature. The right to water has more environmental consequences than any other human right because the entire ecosystem requires water to flourish.[135]

Fantini draws attention to critiques arguing for an urgent rethink of the human right to water to break down artificial barriers between humans and the rest of the natural world.[136] Fantini is interested in exploring conflicting rights in states which have acknowledged legal personhood for nature and believes understanding different cultural approaches may offer valuable contributions. In New Zealand, The Te Awa Tupua (Whanganui River Claims Settlement) Act 2017 recognised legal personhood of the Whanganui River. This could have been a turning point towards a progressive approach to water law. There does not seem to be a movement towards recognising the life force of all watercourses as attracting legal personality. An environmental rights-based approach for freshwater could lead to water being valued as more than just a resource for economic exploitation and consumption. Valuing water as a living being could improve the wellbeing of the water. Unsustainable use of the water would be against its rights to flourish in its natural state. While this idea could develop in the future, it is not an immediate solution. Clear direction from central government is required to ensure protection of freshwater.

Intergenerational equality is an important element as realising a human right to water must be on-discriminatory. General Comment No. 15 notes that "The manner of the realization of the right to water must also be sustainable, ensuring that the right can be realized for present and future generations.[137]" An approach favouring current users may disadvantage future generations if water quality and supply is damaged beyond repair. Gawelab and

[135] Alezah Trigueros "The Human Right to Water: Will Its Fulfillment Contribute to Environmental Degradation?" (2012) 19:2 Indiana Journal of Global Legal Studies 599 at 600.

[136] Fantini, above n 45, at 5.

[137] General Comment No.15, above n 5, at [11].

Bretschneidera discuss that it is ideal for everyone to have unlimited, free and the highest quality water, but this is not sustainable if there is no protection for the future.[138] Sustainability is a crucial barrier to water access that should come before economics.

A human right to water needs environmental safeguards and environmental efforts must consider human needs. Trigueros argues that human rights and environmental rights should balance each other.[139] While scholars are optimistic that a right to water can protect the environment, Trigueros has concerns that it does not encompass broad environmental concerns and could lead to unsustainable and environmentally damaging water allocation decisions.[140] From an environmentalist view, a human right to water is only about human consumption and not conservation. The two are inconsistent by nature as environmental rights interfere with human enjoyment of resources. Human rights focus on present human needs.[141] Trigueros is adamant that protection of the freshwater environment is not achievable through human rights framework and that the human right to water in its current form is not a good direction for international water law to take.[142] Achieving both could be possible if source protection is at the forefront of water framework.

C Competing uses

New Zealand's drinking water faces threats from water intensive industries. A huge volume of freshwater resources goes into New Zealand's export industries. Water allocated by consent is free to take. The water use for exported agriculture is indirectly exporting virtual water.[143] 81% of allocated water goes to agriculture, mainly for irrigation.[144] New Zealand's dairy farms use as much water as 60 million people and around 95% of dairy is exported.[145]

Water intensive farming such as dairying also contributes to the pollution of drinking water sources through nitrate and phosphate leaching. This is a global problem, acknowledged by the Special Rapporteur:

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[138] Gawelab and Bretschneidera, above n 61, at 508.

[139] Alezah Trigueros, above n 135, at 599.

[140] Above at 603.

[141] Above at 623.

[142] Above at 624-625.

[143] Smith, above n 124, at 95.

[144] Above at 92.

[145] Charlie Mitchell "Dairy Farms Using Same Amount of Water as 60 Million People" *Stuff* (18 September 2017) <www.stuff.co.nz> Agricultural economist Peter Fraser and farm consultant Dr Alison Dewes used Dairy NZ figures to calculate this.

> Around the world, mining, industrial and agricultural activities continue to gravely harm the environment and contaminate water, with States failing to protect affected communities and instead giving priority to short-term economic considerations.[146]

Smith advocates that charging for industrial use could put revenue into improving water ecosystems and repairing harm because long-term pricing would be a good safeguard given greater scarcity and competition in future.[147] There are currently no incentives for industrial water users to reduce their consumption as water is a free resource. New Zealand's water is over-allocated, and that reduced water quantity can alter the quality as sources have lessened capacity to dilute contaminates when depleted.[148] Charging for water, whether industrial or domestic, is a controversial idea in New Zealand given the position that no one owns the water and raises questions of property rights and sovereignty over natural resources.[149] A water royalty or resource rental charge would be a valuable economic tool for ensuring investment in water preservation used together with a traditional regulatory approach.[150] A human rights framework does not prevent charging so long any domestic water charges are affordable.

D Protection from privatisation

The means of implementing the human right to water are open ended for states and the existing definitions do not rule out privatisation models. Rather than arguing over whether human rights framework is against privatisation, Fantini frames a better question: "is the human right to water the most appropriate and effective tool to counter the privatization of water services?[151]" A human right to water is not the right tool if keeping water services public is desirable. Gawelab and Bretschneidera see the question to ask is whether privatisation will be an access hurdle for users, if not then it is a neutral factor.[152]

In New Zealand, there is a strong sense that water should remain under public control, whether that be central or local government. A protection against privatisation would need to be implemented outside of human rights framework. A human right to water would not help New Zealand in this aspect. The HRC's view is that people should not be prevented

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[146] Heller, above n 46.

[147] Smith, above n 124, at 98.

[148] Hannah Watson "Putting a Price on Freshwater in New Zealand: Can We Afford Not To?" (2018) 22 NZJEL 245 at 257.

[149] Above at 259.

[150] Above at 285.

[151] Fantini, above n 45, at 3.

[152] Gawelab and Bretschneidera, above n 61, at 518.

from accessing safe drinking water because of high connection and delivery costs.[153] Privatisation is feared because water is essential for life and should be a public resource. The contrary argument is that privatisation could lower water services prices and encourage infrastructure investment to improve water quality.[154] Water services require provision and maintenance of technology and infrastructure. There may be advantages in privatisation where the state lacks resources to provide an efficient service. Hybrid models are also possible. The human rights perspective is neutral to the specifics of economic models, types of services delivery and public versus private resources.[155] A human rights approach to water would require regulation of any private entitles involved and accountability according to standards set by central government including regulation of pricing.

X Conclusions

New Zealand accepts the need to protect drinking water but must balance competing water uses to ensure clean and safe drinking water now and for future generations. The perception of New Zealand having an abundance of drinking water is changing as we are starting to see lessening availability, deteriorating quality and rising public concern about freshwater.[156] There is currently unequal access to safe water given the urban and rural divide in water quality. Nitrates and other effects of intensive farming are growing issues in rural areas. Climate change will threaten the water security for all New Zealanders. It is not clear whether having a recognised right in domestic law would help or hinder New Zealand's progress. It may not make any difference at all. Rather, a human rights framework should be woven into the regulation of New Zealand's water. Water interacts with social, cultural and economic rights, development, indigenous rights and environmental rights.[157] We must not lose sight of human rights when discussing water. It is essential to safeguard something so vital to human life. The elements of a human right to water can be incorporated into New Zealand's legal framework while at the same time allowing for a wider protection of the environment. The HRC promotes the human rights perspective as having a significant role in the debate over water guardianship in New Zealand when balancing competing interests.[158] The human right to water provides a good starting point for discussing the social and environmental justice aspects of water issues

[153] Human Rights Commission, above n 119, at 17.

[154] Above.

[155] Above at 18.

[156] Smith, above n 124, at 87.

[157] Fantini, above n 45, at 2.

[158] Human Rights Commission, above n 119, at 30.

particularly when faced with competing industrial water uses. A human rights perspective would help ensure that equal access to safe drinking water is paramount.

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