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3 September 2020

Our ref: HS-WAg

National Water Reform 2020
Productivity Commission
Locked Bag 2, Collins St East Melbourne VIC 8003, Australia

By email: water.reform.2020@pc.gov.au

Dear Commission,

National Water Reform

Thank you for the opportunity to provide feedback on the National Water Reform Inquiry. The Queensland Law Society (**QLS**) appreciates being able to contribute to this important inquiry and is grateful for the additional time allowed to provide this submission.

QLS is the peak professional body for the State's legal practitioners. We represent and promote over 13,000 legal professionals, increase community understanding of the law, help protect the rights of individuals and advise the community about the many benefits solicitors can provide. QLS also assists the public by advising government on improvements to laws affecting Queenslanders and working to improve their access to the law.

This response has been compiled by the QLS Water and Agribusiness Committee, whose members are legal practitioner volunteers with substantial expertise in this area. We also enclose **Appendix 1**, which has been prepared by our committee member Caitlin McConnel and addresses issues related to water policy in the context of broader challenges related to critical human water needs, climate change and national security. QLS commends Ms McConnel's submission to the Commission for consideration of the issues contained therein.

ASSESSING JURISDICTIONAL PROGRESS - INFORMATION REQUEST 1

The Commission welcomes feedback on:

- ***whether the signatories to the National Water Initiative (NWI) are achieving the agreed objectives and outcomes of the agreement***
- ***which elements of the NWI have seen slow progress***
- ***whether there are cases where jurisdictions have moved away from the actions, outcomes and objectives of the NWI***

- ***any other data and information sources that might be useful for assessing progress.***

The Issues Paper states that the Commission will assess the progress of all jurisdictions against each of the eight NWI elements and that the Commission's assessment will primarily focus on changes since the 2017 assessment of progress (**2017 Inquiry**).

Queensland's progress is considered further below in relation to the following NWI elements:

- water access entitlement and planning frameworks;
- water resource accounting; and
- water markets and trading.

Although there remains further work to be done with respect to extractive industries, climate change and Indigenous cultural values, our review indicates that Queensland has continued to improve its delivery of the water planning framework and provide support for the implementation of those plans.

Water access entitlement and planning frameworks

The 2017 Inquiry recommended the following priorities relevant to Queensland:[1]

- **Extractive Industries**: State and Territory Governments should ensure that water entitlement and planning arrangements explicitly incorporate extractive industries, including ensuring that entitlements for extractive industries are issued under the same framework that applies to other consumptive users.
- **Climate change**: State and Territory Governments should develop a process to regularly assess the impact of climate change on water resources. Where this is considered to have been significant and detrimental, they should ensure that the next water plan review fundamentally reassesses the objectives of the plan and the consequent balance between environmental and consumptive use of water, to ensure it is suited to a drier climate.
- **Indigenous cultural values**: State and Territory Governments should ensure that, as water plans reach the end of their planning cycle, review processes are undertaken that allow optimisation of water use and systems across all users, include explicit consideration of Indigenous cultural values, and involve adequate community and stakeholder engagement.

Whilst water service delivery was not a key priority for Queensland, the 2017 Inquiry recognised that transfer of existing irrigation distribution networks to local ownership had benefited irrigators in parts of Queensland through improved productivity, accountability, long-term planning and responsiveness to irrigators.[2]

[1] Australian Government Productivity Commission, *National Water Reform Productivity Commission Inquiry Report No. 87, 19 December 2017*, p 28 <https://www.pc.gov.au/__data/assets/pdf_file/0007/228175/water-reform.pdf>.
[2] Ibid 11, 40

The status of each finding is considered below.

Extractive Industries

Since the 2017 Inquiry, minimal changes have been implemented by the Queensland Government to ensure extractive industries are issued water entitlements under the same framework applying to other consumptive users. Statutory rights to take or interfere with underground water for extractive industry in Queensland vary depending on whether the take of water is associated water or non-associated water.

As noted in the 2017 Inquiry, 'these rights operate outside of Queensland's water access entitlements and planning framework'.[3] This is undesirable in the view of QLS. Water entitlements should be granted on a transparent basis that is consistent across different types of users.

Climate change

Since the 2017 Inquiry, the Queensland Government has passed legislation to amend the water planning framework to strengthen climate change considerations by incorporating an explicit requirement for the Minister for Department of Natural Resources, Mines and Energy (**DNRME**) to consider the effects of climate change when preparing a water plan or water use plan.[4]

In committee stage of the amending legislation, the DNRME advised the State Development, Natural Resources and Agricultural Industry Development Committee:[5]

> It is critical that Queenslanders have confidence that climate change and its effect on water resources are considered in water planning. It is important to recognise that when we do this work we are not talking about gazing well off into the future. Water plans have 10-year horizons and a ministerial report on the effectiveness of plans is prepared every five years. Should this amendment be accepted by the parliament, water modelling and the preparation of the plan will consider climate change risks only over the lifetime of the plan. The introduction of climate change requirements into water planning will help to align water planning to the Queensland government's commitment in 2017 via the Queensland Climate Adaptation Strategy.[6]

Under the *Water Act 2000* (Qld) (**Water Act**), a water plan expires after 10 years unless it is repealed, or the expiry of the plan is postponed on the basis that the Minister for the DNRME is satisfied the plan is advancing the water plan outcomes.[7]

Of the 23 water plans in place across Queensland, the following water plans include general outcomes regarding climate change:

- ***Water Plan (Border Rivers and Moonie) 2019* (Qld)**: Includes a general outcome to promote improved understanding of the impact of climate change on water availability.

[3] Ibid 88.
[4] Explanatory Notes, Mineral, Water and Other Legislation Amendment Bill 2018 (Qld) 2-3.
[5] State Development, Natural Resources and Agricultural Industry Development Committee, Parliament of Queensland, *Inquiry into the Mineral, Water and Other Legislation Amendment Bill 2018* (Parliamentary Report No. 4, April 2018) 32.
[6] Queensland Parliament, *Public Briefing – Inquiry into the Mineral, Water and Other Legislation Amendment Bill 2018, Transcript of Proceedings* (5 March 2018) <https://www.parliament.qld.gov.au/documents/committees/SDNRAIDC/2018/3MinWatOLAB2018/3-trns-ph5Mar2018.pdf>.
[7] *Water Act 2000* (Qld) s 53(a)-(b), 54(1).

- ***Water Plan (Cape York) 2019* (Qld)**: Includes a general outcome to promote improved understanding of the impact of climate change on water availability.
- ***Water Plan (Condamine and Balonne) 2019* (Qld)**: Includes a general outcome to promote improved understanding of the impact of climate change on water availability.
- ***Water Plan (Cooper Creek) 2011* (Qld)**: Includes a general outcome to account for modelled impacts of climate change on water availability, including the effects of increased duration of low flow periods and no flow periods, and the effect of increased evaporation rates from waterholes.

In recognition of the above, it is unclear how the Queensland Government in the short to medium term will assess the impact of climate change on water resources in circumstances where:

- a water plan can be extended for a further 10 years under the Water Act;
- the hydrological modelling underpinning the objectives of first-generation water plans may not incorporate impacts of climate change; and
- the hydrological modelling underpinning the objectives of second-generation water plans may only contemplate climate change impacts for a period of 10 years – not 20 years.

Having regard to the proposed water plan expiry dates in Table 1 below, Queensland's transition to incorporate the effects of climate change in the water planning framework may not be satisfied until 2031, given the *Water Plan (Cooper Creek) 2011* (Qld) is due to expire on 1 September 2031. This longer transition period is a result of the expiry dates of water plans being postponed, which delays the full incorporation of climate change consideration longer than may have been contemplated by the 2017 Inquiry.

Table 1. Current and proposed expiry dates of Queensland's water plans

No.	Water plan area	Status
1	Baffle Creek	The water plan is due to expire on 1 September 2021. On 20 December 2019, a notice was gazetted to postpone the expiry date of the water plan to 1 September 2030.
2	Barron	The water plan is due to expire on 22 December 2022.
3	Border Rivers and Moonie	The water plan is due to expire in 2029.
4	Boyne River	The water plan is due to expire in September 2024.
5	Burdekin	In 2017, the expiry date for the water plan was extended to 1 September 2019. On 28 August 2019, a notice was gazetted to postpone the expiry date of the water plan to 1 September 2023.

No.	Water plan area	Status
6	Burnett	The water plan is due to expire on 1 September 2024.
7	Calliope River	On 18 August 2017, a public notice was released postponing the expiry date of the water plan to 14 December 2026.
8	Cape York	The water plan is due to expire on 1 September 2029.
9	Condamine and Balonne	The water plan is due to expire on 1 September 2029.
10	Cooper Creek	The water plan is due to expire on 1 September 2022. On 20 December 2019, a public notice was released to postpone the expiry date of the water plan to 1 September 2031.
11	Fitzroy	The water plan is due to expire on 1 September 2022.
12	Georgina and Diamantina	The water plan is due to expire on 5 August 2024.
13	Gold Coast	On 25 November 2016, a public notice was released postponing the expiry of the water plan to 14 December 2026.
14	Great Artesian	The water plan is due to expire on 1 September 2027.
15	Gulf	On 24 August 2018, a public notice was released postponing the expiry of the water plan to 24 August 1 November 2027.
16	Logan	On 25 November 2016, a public notice was released postponing the expiry date of the water plan to 14 December 2026.
17	Mary	On 8 July 2016, a public notice was released postponing the expiry date of the water plan to 1 September 2021.
18	Mitchell	On 24 August 2018, a public notice was released postponing the expiry date of the water plan to 1 November 2027.
19	Moreton	On 25 November 2016, a public notice was released postponing the expiry date of the water plan to 14 December 2026.
20	Pioneer Valley	The water plan is due to expire on 19 December 2022.
21	Warrego, Paroo, Bulloo and Nebine	The water plan is due to expire on 1 September 2026.
22	Wet Tropics	The water plan is due to expire on 1 September 2024.
23	Whitsunday	The water plan is due to expire on 1 September 2020. On 15 June 2020, a notice was released of the Minister of the DNRME's intention to postpone the expiry of the water plan until 1 December 2025.

Indigenous cultural values

The 2017 Inquiry recommended that State and Territory Governments should ensure that: [8]

- Indigenous cultural objectives are explicitly identified and provided for in water plans;
- progress in achieving Indigenous cultural objectives is regularly monitored and reported publicly; and
- there is public reporting of how Indigenous cultural objectives have been considered in the management of environmental water – both held and planned.

Since the 2017 Inquiry, the Queensland Government has passed legislation to amend the Water Act to provide for the inclusion of cultural outcomes in water plans to support the protection of cultural values of water resources for Aboriginal peoples and Torres Strait Islanders.[9]

The amendments to the Water Act:

- enhance the water planning provision of the Water Act to better recognise the importance of water resources to Aboriginal people and Torres Strait Islanders; [10]
- support the Minister for the DNRME in preparing water plans by providing for cultural outcomes to be specified separately from economic, social and environmental outcomes;[11]
- require community consultation to be undertaken within the plan area during the development of the water plan to inform the selection of appropriate measures and strategies;[12]
- expand the definition of 'environment' to align with the approach under the *Environmental Protection Act 1994* (Qld), which defines 'environment' to include ecosystem constituents, natural and physical resources, qualities and characteristics of places, and social, economic, aesthetic and cultural conditions;[13] and
- provide for more explicit recognition of cultural conditions when considering the environment under any provision in the Water Act.[14]

Of Queensland's 23 water plans, the following include specific cultural outcomes as distinct from other social, economic and environmental outcomes:

- ***Water Plan (Border Rivers and Moonie) 2019* (Qld)**: Includes a cultural outcome to maintain flows of water that support the water-related cultural, spiritual, social and environmental values of Aboriginal people;

[8] Australian Government Productivity Commission (n 1) 29.
[9] Explanatory Notes, Mineral, Water and Other Legislation Amendment Bill 2018 (Qld) 1.
[10] Ibid 3.
[11] Ibid.
[12] Ibid 6.
[13] Ibid.
[14] Ibid.

- ***Water Plan (Cape York) 2019*** **(Qld)**: Includes cultural outcomes:
  - to make water to which this plan applies available to support the cultural aspirations of Aboriginal people and Torres Strait Islanders;
  - to maintain the flows of water to which this plan applies that support the water-related cultural, spiritual and social values of Aboriginal people and Torres Strait Islanders;
  - to support the continuation of the cultural knowledge and practices of Aboriginal people and Torres Strait Islanders that relate to water for future generations;
  - to recognise and respect the cultural and spiritual connection to water of Aboriginal people and Torres Strait Islanders;
  - to engage Aboriginal people and Torres Strait Islanders, as the traditional custodians and owners of land, in the management and allocation of water in the plan area; and
  - to integrate knowledge about Aboriginal tradition, Island custom and science into the processes for making decisions about the future management, allocation and use of water in the plan area.
- ***Water Plan (Condamine and Balonne) 2019*** **(Qld)**: Includes a cultural outcome to maintain flows of water that support the water-related cultural, spiritual, social and environmental values of Aboriginal people;
- ***Water Plan (Warrego, Paroo, Bulloo and Nebine) 2016*** **(Qld)**: Includes Indigenous outcomes to ensure:
  - availability of water for traditional owners who are dependent on water resources so that economic and social aspirations are achieved; and
  - maintenance of flows of water that support water-related cultural and recreational values of the traditional owners.

Having regard to the proposed water plan expiry dates in Table 1, Queensland's transition to incorporate specific cultural outcomes in the water planning framework may not be satisfied until 2031, given the *Water Plan (Cooper Creek) 2011* (Qld) is due to expire on 1 September 2031. Once again, this longer transition period is a result of the expiry date of water plans being postponed, which delays the full incorporation of cultural outcomes longer than may have been contemplated by the 2017 Inquiry.

Water service delivery

The 2017 Inquiry found that transfer of existing irrigation distribution networks to local ownership has benefited irrigators in parts of Queensland through improved productivity, accountability, long-term planning and responsiveness to irrigators.[15] Since the 2017 Inquiry, the Queensland Government has passed legislation to facilitate the restructure and transfer of

[15] Australian Government Productivity Commission, (n 1) 11, 40.

a number of Sunwater's channel irrigation schemes to local management arrangements (**LMA**).[16]

The following channel irrigation schemes have now transitioned to LMA:[17]

- The St George Scheme transitioned to LMA on 30 June 2018.
- The Theodore Scheme transitioned to LMA on 2 October 2018.
- The Emerald Scheme transitioned to LMA on 30 June 2019.
- The Eton Scheme transitioned to LMA on 31 March 2020.

The Bundaberg Scheme and Lower Mary Scheme formally withdrew from the LMA process in 2017.[18] For the irrigators and customers in the Burdekin-Haughton Scheme and the Mareeba-Dimbulah Scheme, the LMA assessment found that the most viable option was for Sunwater to continue operating the schemes in partnership with the local community.[19]

Water resource accounting

The 2017 Inquiry found that water metering, accounting and compliance systems were in place in all jurisdictions, however there was evidence of poor compliance arrangements in some of the Murray-Darling Basin jurisdictions.

In July 2018, the DNRME established the Rural Water Management Program (**RWMP**) to drive more transparent and sustainable rural water management across Queensland.[20] Establishing the RWMP was a necessary step for the DNRME to lead and deliver the implementation of the Queensland Government response to the Independent Audit of Queensland Non-Urban Water Measurement and Compliance (**Independent Audit**).[21] The Independent Audit was commissioned in August 2017 following allegations of water theft, corruption and media scrutiny of management of non-urban water in the Murray-Darling Basin.

In March 2018, the Independent Audit review panel delivered their final report making a series of recommendations. The key findings of the Independent Audit are summarised below:[22]

- **Governance, culture and transparency need improvement**: Well-developed water planning arrangements are in place, based on best available science, community engagement and clear process. However, the governance arrangements associated with water management, monitoring and compliance of non-urban water use lacked robustness, completeness and transparency.

[16] Explanatory Notes, Water (Local Management Arrangements) Amendment Bill 2016 (Qld), 1.
[17] Department of Natural Resources, Mines and Energy, Local management arrangements for Sunwater irrigation schemes (Web page, 3 April 2020) <https://www.dnrme.qld.gov.au/land-water/initiatives/lma-sunwater>.
[18] Ibid.
[19] Ibid.
[20] Department of Natural Resources, Mines and Energy, *Rural Water Management Program – Implementation of the Independent Audit of Queensland Non-Urban Water Measurement and Compliance Government Response: Performance Review Report* (September 2019) <https://www.dnrme.qld.gov.au/__data/assets/pdf_file/0010/1457146/performance-review-report.pdf>.
[21] Ibid.
[22] Independent Expert Panel, Independent Audit of Queensland Non-Urban Water Measurement and Compliance Final Report (23 March 2018) <https://www.dnrme.qld.gov.au/__data/assets/pdf_file/0010/1396756/independent-audit-water.pdf>.

- **Measurement and reporting requires significant improvement**: Queensland's use of technology in non-urban water measurement and monitoring activities is immature.
- **Water harvesting and overland flow management**: Whilst Queensland has made strong progress in the measurement of overland flow in the Lower Balonne Area, in other areas of the state if was not possible to accurately and reliably measure overland flow and water harvesting.
- **Required investment**: An additional $17 million per year in annualised cost would be required to implement the recommendations made for the unsupplemented meter fleet, and to implement the assurance and compliance changes needed.
- **Recognition of staff dedication**: Systematic issues which have developed over a long period of time were identified. However, this was not a result of the DNRME officers failing their responsibilities. Rather, it will take decisive leadership to drive a change of institutional culture to address the issues of concern.

The following eight recommendations summarise the full recommendations of the Independent Audit:[23]

- Establish a Compliance Management and Review Group with separation from operational activities to review and report regularly to senior management of the Department on the implementation of water measurement and compliance programs. An independent audit must be conducted within two years of this Audit and report on all measurement and compliance programs including the performance of the Compliance Management and Review Group.
- Develop a stronger culture towards compliance enforcement and empower the organisation and staff to achieve compliance objectives.
- Introduce a standard metering policy for both supplemented and unsupplemented water extractions which includes developing a Queensland metering standard, the DNRME validation of meter installations, and verification of meter accuracy through testing.
- Invest additional resourcing to build capacity including sound, modern management and information systems to deliver metering and compliance arrangements, and enhancing staff meter knowledge, lost through earlier policy change.
- Take a series of actions over the next 18 months to gather required information for a long term decision on meter ownership and management. This issue is to be resolved within 24 months and should include consideration of the risks, and benefits and costs of outsourcing metering services to a third party provider(s).

[23] Independent Expert Panel, Independent Audit of Queensland Non-Urban Water Measurement and Compliance Final Report (23 March 2018) <https://www.dnrme.qld.gov.au/__data/assets/pdf_file/0010/1396756/independent-audit-water.pdf>.

- Improve transparency by making publicly available online information relating to water resource management, water use and compliance. This should include the development and publication of state-wide and catchment level compliance objectives and management strategies aligned with risks and issues.[24]
- Undertake a review of existing legislation and regulatory instruments in relation to water planning and implementation to ensure greater consistency between obligations, objectives, and management and compliance practices.
- Improve the reliability and accuracy of water harvesting and overland flow measurement and monitoring.

Key RWMP projects to address the Independent Audit findings include:

- **Strengthened water measurement**: The DNRME are taking steps to improve how the take of water is measured by developing strengthened non-urban water measurement policy. The DNRME has already completed:
  - a comprehensive review of Queensland's non-urban water metering policy and standard; and
  - a state-wide risk assessment of water measurement and monitoring activities based on the pressure on the water resource in each catchment.
- **Transparent water information**: The DNRME will invest in technology and digital solutions to enhance its systems to ensure customers and the community have better access to accurate and timely water information. The DNRME has already:
  - developed a water dashboard trial in two water management areas to provide water users with information on their entitlements, water availability and their usage;
  - completed a water entitlement viewer; and
  - developed a future state roadmap for water information systems to support contemporary, effective and sustainable water management and compliance.
- **Enhanced regulatory approach:** The DNRME are reviewing existing regulatory frameworks to identify any changes that might be required to support improved compliance and water management. The DNRME has already:
  - amended regulations to enhance faulty meter reporting and meter validation requirements; and
  - reviewed legislation and policies to identify possible enhancements to water compliance arrangements.
- **Robust compliance:** The DNRME is strengthening its compliance framework to give Queenslanders confidence that water resources are being managed fairly, consistently and responsibly. The DNRME has already:

[24] We would add that this information must be meaningfully presented and placed in context such that losses, including through inefficiencies, leaks and illegal taking, can be understood.

- established a formalised framework and associated governance arrangements for Queensland's water management; and
- created the rural water management program office and team to deliver the commitments made in the Queensland Government response.

Further details of the RWMP provided by the DNRME, can be located here.

Water markets and trading

The 2017 Inquiry recommended the following priorities relevant to Queensland:[25]

- State and Territory Governments should remove those residual trading rules, policies (whether or not explicitly stated) and other barriers that prevent water being traded, or otherwise transferred, between the irrigation and urban sectors.
- The role of governments in providing water market information should be focused on ensuring the quality and accessibility of water resource, market rules and basic trade data. In fulfilling this role, State and Territory Governments should improve the quality and accessibility of trade data in water registers.

A further RWMP project is to optimise water markets. QLS understands that the DNRME is working with stakeholders to maximise use of water resources and is working to:

- understand why water allocations are underutilised in some areas of the state;
- develop strategies to optimise water use for economic development;
- improve processes and information provision to support increased water trading;
- support water users to plan for prudent and cost-effective water insurance practices;
- improve unallocated water release processes to support economic development; and
- provide water customers and investors with integrated and coordinated advice about access to water.

Following amendments to the Water Act, the DNRME can now allow temporary access to unallocated water held as strategic water reserves. The water reserved for Nathan Dam in the Fitzroy River basin was the first released for short term access.

The DNMRE continues to take steps to implement other actions to optimise water markets in Queensland. Further information on the status of other water market activities can be located here.

[25] Australian Government Productivity Commission (n 1) 28.

FUTURE REFORM DIRECTIONS - INFORMATION REQUEST 3

- ***The Commission welcomes feedback on the matters that should be considered for inclusion in a renewed NWI.***

The NWI has been a critical driver of water reform in Queensland (and other States and Territories) since its inception and has been the impetus for considerable legislative and policy reforms. Implementation of NWI objectives by the Queensland Government and other stakeholders has led to significant improvements in water resource management, water services delivery and public awareness and education around water as an essential economic, environmental, social and health input.

To build on the good progress to date and to ensure the NWI maintains its relevance as Australia's blueprint for water reform, QLS agrees that the NWI requires ongoing adaptation in response to existing and emerging challenges including population growth, climate change and extreme weather events.

QLS submits that one area on which a renewed NWI should include a greater emphasis is recycled water (as an alternative water source) and water re-use initiatives in an urban water management context. In particular, QLS considers that a closer analysis of the water security and other benefits that may follow from revising the policy settings in this area would be beneficial. This is especially so given that population growth in metropolitan areas means not only increased demand for water but also increased volumes of available effluent which may be treated to appropriate quality parameters for a range of potable and non-potable uses.

Presently, there are a number of barriers that may impede developments and innovation by water service providers in this area. This is despite sufficient volumes of available wastewater, water quality being fit for purpose, and service providers already having (or having the ability to develop) the necessary infrastructure and technological capability. QLS submits that consideration may be given to the following matters to overcome or at least mitigate these impediments:

- clarifying the operation of, and interaction between, existing legislation with similar but competing objects (in particular, the approvals and other regulatory requirements applicable to recycled water management) (e.g. *Water Supply (Safety and Reliability) Act 2008* (Qld), *Public Health Act 2005* (Qld) and associated regulations; *Food Act 2006* (Qld));
- clarifying the roles and responsibilities of the various State and local government agencies charged with administering applicable legislation and better coordinating decision-making and communication with proponents and other relevant stakeholders;
- ensuring that the guidance materials underpinning the legislation (and on which regulators rely in statutory decision-making) remain current (with law and policy) and aligned with best practice operational, scientific and technological practices; and
- providing an objective framework for undertaking any necessary cost benefit analysis i.e. to ascertain whether relevant projects offer value for money and an acceptable risk profile compared to more traditional supply options.

Similar themes to those outlined above are addressed in the Commission's Research Paper 'Integrated Urban Water Management – Why a good idea seems hard to implement' (March 2020) in the broader context of Integrated Water Cycle Management. QLS commends the Commission for its research to date in this area.

WATER ACCOUNTING AND COMPLIANCE - INFORMATION REQUEST 5

- ***How could the NWI be amended to support best practice monitoring and compliance across jurisdictions?***

We refer you to our response to information request 1.

INDIGENOUS WATER USE - INFORMATION REQUEST 7

- ***What progress are States and Territories making on including Indigenous cultural values in water plans, and how are they reporting progress?***
- ***How could a refreshed NWI help Indigenous Australians realise their aspirations for access to water, including cultural and economic uses?***

We refer you to our response to information request 1.

WATER SERVICES - INFORMATION REQUEST 11

- ***What steps have been undertaken to address the priority areas for urban water reform identified in 2017?***
- ***Is further guidance on implementing an integrated water cycle management approach for delivering water supply, wastewater and stormwater management services required?***
- ***How does jurisdictional urban water service planning interface with urban land-use planning at different scales? Are the roles and responsibilities clearly set out?***
- ***Is the role of water in delivering amenity and liveability outcomes clear? How are the trade-offs with other NWI outcomes considered? Is it clear how the level and type of amenity delivered by urban water services will be funded?***

Our comments in response to Information Request 3 above, apply equally to the second dot point above.

INVESTMENT IN NEW WATER INFRASTRUCTURE - INFORMATION REQUEST 12

- ***Are there examples of projects that have not met the NWI criteria for new water infrastructure investment?***
- ***What principles should inform government funding or financing of new water infrastructure?***

What principles should inform government funding or financing of new water infrastructure?

Over the past two years (and since the 2017 Inquiry) there have been a number of Queensland Government policy developments which inform the principles to be applied by the State in making water infrastructure investment decisions.

These developments include:

- The '*Queensland Bulk Water Opportunities Statement'* (2018) (**QBWOS**) and Program Update (2019) published by the Department of Natural Resources, Mines and Energy – these documents outline a framework for sustainable regional economic development through better use of existing bulk water infrastructure and effective investment in new infrastructure. In doing so, the documents outline the objectives for the State's investment in bulk water supply infrastructure and the principles that guide bulk water investment decision-making (e.g. net economic benefit and commercial viability). The QBWOS also provides an annual update on Queensland's key infrastructure projects, across the following categories:
    - Dam safety projects
    - Water supply efficiency projects
    - Water supply projects for economic development
- Auditor-General Report No. 14 (2019-20) *'Evaluating major infrastructure projects*' (referred to the Economics and Governance Committee of the Queensland Legislative Assembly for consideration on 21 May 2020) - this report examines the role of Building Queensland (**BQ**), a statutory body charged with improving public sector infrastructure outcomes, and makes a series of recommendations for reform and observations including with respect to:
    - business case proposals for infrastructure projects being more robust;
    - identifying infrastructure proposals through independent research and publishing the criteria used to identify infrastructure priorities; and
    - the timing of government infrastructure investment announcements.
- '*Assessing Demand for Water: Guidance for project proponents*' (April 2020) – published by the Department of Natural Resources, Mines and Energy as part of the broader QBWOS framework - this guidance applies to proponents seeking Queensland Government investment in water infrastructure projects and highlights the importance of robust business cases that are consistent with applicable project assessment frameworks (i.e. including those administered by BQ) and supported by best practice water demand assessment.

Despite these developments, our members report a perception that the process for evaluating project investment can be politicised and is not sufficiently transparent in its requirements. There is also concern that the prospects of diminishing long term supply of water and increased demand are not adequately considered in the assessment criteria for new projects.

Therefore, while there seems to be a relatively comprehensive body of work in train in Queensland in relation to the framework and principles to guide government decisions on infrastructure investment (particularly in regional Queensland), QLS suggests that closer consideration of the existing policy and other guidance materials in this area is necessary (including to ascertain the extent of any consultation on these matters between the State, relevant agencies, water utilities and other stakeholders).

If you have any queries regarding the contents of this letter, please do not hesitate to contact our Legal Policy team via policy@qls.com.au or by phone on (07) 3842 5930.

Yours faithfully

Luke Murphy
President

Appendix 1

Water policy, entitlement and planning in light of climate change and national security

By Caitlin McConnel[1]

1. Introduction

Never has Australia so embodied Dorothea Mackellar's iconic lament, 'My Country', as it has in the past twelve months. In 2019 and 2020, Australia has been a 'sunburnt country … of droughts and flooding rains', a 'wide brown land' with 'pitiless blue sky', where we saw 'cattle die … for flood and fire and famine'.[2] Australia has been a 'wilful, lavish land', that has arguably endured its worst bushfire season on record in eastern Australia; its worst nation-wide drought on record, and the worst flooding on record in Northern Queensland, all of which have been reported as apocalyptic, and fuelled by climate change.[3]

The ongoing natural disasters gripping Australia have garnered the attention of international media, governments and scientists; all commentary of which can be eloquently summarised by British naturalist Sir David Attenborough, who on 16 January 2020 said that 'the moment of crisis has come' in respect of the global efforts to tackle climate change.[4] Attenborough also noted that the bushfires (and natural disasters) in Australia were clearly reflective of the 'temperatures of the Earth' increasing,[5] which will have adverse impacts on Australian communities and agricultural production. Indeed, the ongoing drought, record temperatures and recent bushfires have already raised international concerns about the impact on global food supplies,[6] in circumstances where Australia is the 11th largest agricultural exporting country in the world.[7]

In light of this, the National Water Reform Productivity Commission (**Commission**) has identified that in the course of its inquiry:

(a) it will prioritise water management challenges that have arisen or intensified since 2017, particularly in respect of climate change and extreme events;[8]

(b) 'climate change and population growth present significant risks to the security of Australia's water resources',[9] and

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[2] Dorothea Mackellar, 'My Country' (Website) < https://www.dorotheamackellar.com.au/archive/mycountry.htm>.
[3] BBC News, 'How did Australia fires start and what is being done? A very simple guide', BBC News (Article, 7 January 2020), <https://www.bbc.com/news/world-australia-50980386>.
[4] BBC News, 'Sir David Attenborough warms of climate 'crisis moment'', BBC News (Article, 16 January 2020), <https://www.bbc.com/news/science-environment-51123638>.
[5] Ibid.
[6] Blair Shiff, 'Australian wildfires may impact global food supply: beef, lamb, wheat, dairy might be affected', Fox News (Articles, 12 January 2020) < https://www.foxbusiness.com/money/australian-wildfires-global-food-supply>.
[7] Food and Agriculture Organization of the United Nations, 'World Food and Agriculture Statistical Pocketbook 2019' (Report), 34.
[8] Australian Government Productivity Commission, National Water Reform Productivity Commission Issues Paper, May 2020, p 6.
[9] Australian Government Productivity Commission, National Water Reform Productivity Commission Issues Paper, May 2020, p 2.

(c) recent events including drought and extreme bushfires have been a source of pressure on Australian communities and the effective management of water.

This focus is in accordance with the National Water Initiative (**NWI**), which provides that governments have a 'responsibility to ensure that water is allocated and used to achieve socially and economically beneficial outcomes in a manner that is environmentally sustainable'.[10] Indeed, the very objectives of the NWI include that economic, social and environmental outcomes should be achieved by:

(a) transparent, statutory-based water planning;

(b) the implementation of statutory provisions for environmental and other public benefit outcomes, and improved environmental management practices; and

(c) the ability to address future issues that may impact on water users and communities.[11]

Significantly, the NWI acknowledged that it was likely that water access entitlement holders would bear the risks of the reduction of water allocations in time, due to seasonal or long-term changes in climate and periodic natural events such as bushfires and drought.[12] However the importance of water security, and the allocation of water resources, is yet to be appropriately considered in light of ongoing climate risks with the need to balance economic, social and environmental outcomes. This is especially so when considering the direct link between water security has to national security.

The Commission should consider the importance of water resource planning and management in the context of:

(a) critical human water needs, which are linked to economic, social and environmental outcomes;

(b) climate risks (including natural disasters); and

(c) national security.

Moreover, the Commission should consider how the management of Australia's water resources can be undertaken in direct correlation with the development of an appropriate national security strategy for the protection of our water resources. This is in circumstances where the management of water resources, climate risks and our national security is inextricably linked.

For the benefit of the Commission, this submission provides:

(a) background in respect of the definitions of water security; economic, social and environmental outcomes; and climate risks;

(b) consideration of Australia's approach to natural disaster and national security strategy; and

[10] Intergovernmental Agreement on a National Water Initiative, p 1.
[11] Intergovernmental Agreement on a National Water Initiative, p 3 - 4.
[12] Intergovernmental Agreement on a National Water Initiative, p 8.

(c) evaluation of how the issue of water management should be directly linked to that of natural disaster and national security strategies.

This submission calls for the Commission to potentially consider the implementation of strategies beyond the strict scope of the *Water Act 2007* (Cth), however, in the context of ensuring that the NWI is appropriately fulfilling its obligation as being the national blueprint for water reform, it is clear that consideration of these issues, and indeed the formulation of a combined (and not siloed) strategy is now more paramount than ever.

2. Water security

I previously explored the issue of water and food security in the context of the Murray-Darling Basin in my article 'Critical Human Water Needs: Failing to Comply with the Objects of the Water Act and Human Rights Obligations', (2019) 36 *Environmental and Planning Law Journal* 212 (**EPLJ Article**).

The EPLJ Article relevantly identified that:

> *'The United Nations has defined water security as being the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining human well-being, socioeconomic development, and for preserving ecosystems in a climate of peace and political stability.[13] The United Nations have also defined food security as being 'the condition in which all people, at all times, have physical, social and economic access to sufficient safe and nutritious food that meets their dietary needs'.[14]*
>
> *These definitions are demonstrative of the rights described under the International Covenant on Economic, Social and Cultural Rights (**ICESCR**), which is a multilateral treaty committing to the economic, social and cultural rights of individuals. Its core provisions include the right to an adequate standard of living (including food),[15] and a right to health.[16]'*

The EPLJ Article also identified that:

> *'The evolution of water management in Australia has moved from a right associated with the use of water resources, to that of balancing water supply with the requirement of long-term sustainability. Over allocation and overuse of water resources have been identified as the major drivers for such reform'.[17]*

Such reform is evident through the enactment of the *Water Act 2007* (Cth) (the **Water Act**), which is aimed at making provision for matters of national interest in relation to water, including economic and social impacts. However, and as identified in the EPLJ Article, the

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[13] Caitlin McConnel, 'Critical Human Water Needs: Failing to Comply with the Objects of the Water Act and Human Rights Obligations', (2019) 36 *Environmental and Planning Law Journal* 212, 214 citing UN Water, 'What is water security?' (2013) <http://www.unwater.org/publications/water-security-infographic/>.
[14] Caitlin McConnel, 'Critical Human Water Needs: Failing to Comply with the Objects of the Water Act and Human Rights Obligations', (2019) 36 *Environmental and Planning Law Journal* 212, 214 citing International Food Policy Research Institute, 'Food Security' (2018) <http://www.ifpri.org/topic/food-security/>.
[15] Caitlin McConnel, 'Critical Human Water Needs: Failing to Comply with the Objects of the Water Act and Human Rights Obligations', (2019) 36 *Environmental and Planning Law Journal* 212, 214 citing UN General Assembly, International Covenant on Economic, Social and Cultural Rights, 16 December 1966, United Nations, Treaty Series, vol. 993, p. 3, Article 11.
[16] Caitlin McConnel, 'Critical Human Water Needs: Failing to Comply with the Objects of the Water Act and Human Rights Obligations', (2019) 36 *Environmental and Planning Law Journal* 212, 214 citing UN General Assembly, International Covenant on Economic, Social and Cultural Rights, 16 December 1966, United Nations, Treaty Series, vol. 993, p. 3, Article 12.
[17] Caitlin McConnel, 'Critical Human Water Needs: Failing to Comply with the Objects of the Water Act and Human Rights Obligations', (2019) 36 *Environmental and Planning Law Journal* 212, 214.

ongoing focus of the implementation of the Water Act has been on the objective 'to return to an environmentally sustainable level of extraction of water, through implementation of the SDLs',[18] rather than considering an equally - if not more pressing - important objective, being the management of water resources to meet critical human water needs, or to withstand the impacts of climate risks.

This is in circumstances where water scarcity has been identified as potentially leading to conflict and destabilisation of geopolitical and economic order in Australia.[19] As a result, and in light of the definition of water security by the United Nations, it is necessary for the Commission to consider how water security (and by extension national security) could be assured through effective water planning which considers the necessity to meet critical human water needs in light of the ongoing threat of climate risks.

3. Critical Human Water Needs

The Water Act stipulates that all water resource management plans must have regard to the management of its water resources during extreme dry periods; particularly the allocation of water for the purposes of meeting critical human water needs in accordance with Part 2A. Despite largely relating to the preparation of water resource management plans by States and Territories within the Murray-Darling Basin, s 86A(1)(a) of the Water Act relevantly provides that 'the Commonwealth and the Basin States have agreed that critical human water needs are the highest priority water use for communities who are dependent on Basin water resources'.

Section 86A(2) of the Water Act defines 'critical human water needs' as being 'the minimum amount of water, that can only reasonably be provided from Basin water resources, required to meet:

(a) core human consumption requirements in urban and rural areas; and

(b) those non-human consumption requirements that a failure to meet would cause prohibitively high social, economic or national security costs.'

The EPLJ Article relatively identified that, when read in isolation:

> *'… s 86A(1)(a) and s 86A(2) of the* (Water) *Act would imply that meeting critical human water needs would be necessary for all Basin States in the development of water resource plans for the whole of the Murray-Darling Basin. However, in reading Part 2A of the Act and Chapter 11 of the Basin Plan as a whole, and having particular regard to s 86A(1)(b) of the Act, meeting the critical human water needs of communities within the Murray-Darling Basin is contingent upon the provision of conveyance water in the River Murray System'.*[20]

Despite the focus of the EPLJ Article being on the management of water resources within the Murray-Darling Basin, it is arguable that, the very management of <u>all</u> water resources throughout Australia should be considered in light of the understanding - and agreement - by

[18] Ibid.
[19] Caitlin McConnel, 'Critical Human Water Needs: Failing to Comply with the Objects of the Water Act and Human Rights Obligations', (2019) 36 *Environmental and Planning Law Journal* 212, 219.
[20] Caitlin McConnel, 'Critical Human Water Needs: Failing to Comply with the Objects of the Water Act and Human Rights Obligations', (2019) 36 *Environmental and Planning Law Journal* 212, 217.

Commonwealth, State and Territory governments that meeting critical human water needs, particularly in light of climate change risks, should be of the highest priority.

This is particularly in circumstances where the very objects of the Water Act relevantly include that the States and Territories of Australia should:

(a) manage water resources in the national interest;[21]

(b) give effect to relevant international agreements;[22]

(c) promote the use and management of the water resources in a manner that optimises economic, social and environmental outcomes;[23] an

(d) maximise the net economic returns to the Australian community, subject to ensuring environmentally sustainable levels of extraction. [24]

What is in the national interest in the context of the Water Act can be inferred through the NWI, through obligations such as increasing the productivity and efficiency of Australia's water use, whilst also servicing rural and urban communities and ensuring the health of all water systems.

Whilst the Water Act provides a definition of critical human water needs at s 86A(2) of the Act, the EPLJ Article identified that the Water Act *'does not provide definition or guidance on the interpretation of:*

(a) *'core human consumption requirements'; or*

(b) *'high social, economic or national security costs".*[25]

Moreover, and whilst the NWI recognises that the framework for water management must be socially, economically and environmentally sustainable, the Water Act provides little guidance in respect of the interpretation of social or economic outcomes or costs.

Helpfully, the EPLJ Article considered this issue, and detailed the following:

> *'In 2016, the Australian Business Roundtable for Disaster Resilience & Safe Communities (the* ***Roundtable****) defined economic cost and social cost in the context of natural disasters. Relevantly, an extended dry period was recognised as a natural disaster for the purposes of the Roundtable. In its report, economic cost was defined as including loss of income, infrastructure, education, community and health and wellbeing, whilst social costs were defined as the effect on the health and wellbeing of families and the social fabric of communities.*[26]

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[21] Section 3(a) of the *Water Act 2007* (Cth).
[22] Section 3(b) of the *Water Act 2007* (Cth).
[23] Section 3(c) of the *Water Act 2007* (Cth).
[24] Section 3(d)(iii) of the *Water Act 2007* (Cth).
[25] Caitlin McConnel, 'Critical Human Water Needs: Failing to Comply with the Objects of the Water Act and Human Rights Obligations', (2019) 36 *Environmental and Planning Law Journal* 212, 217.
[26] Caitlin McConnel, 'Critical Human Water Needs: Failing to Comply with the Objects of the Water Act and Human Rights Obligations', (2019) 36 *Environmental and Planning Law Journal* 212, 222 citing Deloitte Access Economics, 'The Economic Cost of the Social Impact of National Disasters, Australian Business Roundtable for Disaster Resilience & Safe Communities' (Report, Australian Business Roundtable for Disaster Resilience & Safe Communities, March 2016) <http://australianbusinessroundtable.com.au/assets/documents/Report%20-%20Social%20costs/Report%20-%20The%20economic%20cost%20of%20the%20social%20impact%20of%20natural%20disasters.pdf>.

In the context of the water resource management in Australia, the Climate Change Council has recently described that the socioeconomic impacts of policies and management are upon agriculture, people and infrastructure.[27] It identified that:

(a) *water security involves having sufficient amounts of clean freshwater for human consumption;[28]*

(b) *drought poses serious health risks to humans, particularly poor mental health arising from personal, financial and community stress,[29] which can be identified as a social cost;*

(c) *drought places pressure on urban water supplies and changes to consumer behaviour,[30] and*

(d) *drought has substantial impacts on agriculture, includes loss of production, employment and drops in domestic food prices and export earnings.[31]*

The Murray-Darling Basin Authority also released a position statement regarding the socioeconomic requirements for the development of water resource plans. This statement provided that the 'overall social and economic outcome of the Basin Plan is to deliver a healthy and working Murray-Darling Basin that includes':

(e) *communities with sufficient and reliable water supplies fit for domestic, recreational and domestic use;*

(f) *productive and resilient water-dependent industries; and*

(g) *communities with confident long-term futures.[32]*

For the purposes of the Act, it can therefore be inferred that social costs can include loss of freshwater and impacts to health, whilst economic costs can include impacts to agriculture including loss of production and income.

Without clear definitions of critical human water needs, and social, economic and environmental outcomes, the EPLJ Article opined that it is difficult to ascertain how States and Territories could balance *'allocation of water resources during extreme dry periods for 'core*

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[27] Caitlin McConnel, 'Critical Human Water Needs: Failing to Comply with the Objects of the Water Act and Human Rights Obligations', (2019) 36 *Environmental and Planning Law Journal* 212, 222 citing Will Steffen, Rob Vertessy, Annika Dean, Lesley Hughes, Hilary Bambrick, Joelle Gergis and Martin Rice, 'Deluge and Drought: Australia's Water Security in a Changing Climate', (Report, Climate Council of Australia, 2018) 7, 67.

[28] Caitlin McConnel, 'Critical Human Water Needs: Failing to Comply with the Objects of the Water Act and Human Rights Obligations', (2019) 36 *Environmental and Planning Law Journal* 212, 222 citing Will Steffen, Rob Vertessy, Annika Dean, Lesley Hughes, Hilary Bambrick, Joelle Gergis and Martin Rice, 'Deluge and Drought: Australia's Water Security in a Changing Climate', (Report, Climate Council of Australia, 2018) 7,, 42.

[29] Caitlin McConnel, 'Critical Human Water Needs: Failing to Comply with the Objects of the Water Act and Human Rights Obligations', (2019) 36 *Environmental and Planning Law Journal* 212, 222 citing Will Steffen, Rob Vertessy, Annika Dean, Lesley Hughes, Hilary Bambrick, Joelle Gergis and Martin Rice, 'Deluge and Drought: Australia's Water Security in a Changing Climate', (Report, Climate Council of Australia, 2018) 7,, 49.

[30] Caitlin McConnel, 'Critical Human Water Needs: Failing to Comply with the Objects of the Water Act and Human Rights Obligations', (2019) 36 *Environmental and Planning Law Journal* 212, 222 citing Will Steffen, Rob Vertessy, Annika Dean, Lesley Hughes, Hilary Bambrick, Joelle Gergis and Martin Rice, 'Deluge and Drought: Australia's Water Security in a Changing Climate', (Report, Climate Council of Australia, 2018) 7,, 50.

[31] Caitlin McConnel, 'Critical Human Water Needs: Failing to Comply with the Objects of the Water Act and Human Rights Obligations', (2019) 36 *Environmental and Planning Law Journal* 212, 222 citing Will Steffen, Rob Vertessy, Annika Dean, Lesley Hughes, Hilary Bambrick, Joelle Gergis and Martin Rice, 'Deluge and Drought: Australia's Water Security in a Changing Climate', (Report, Climate Council of Australia, 2018) 7,, 55.

[32] Murray-Darling Basin Authority, 'Basin Plan Water Resource Plan Requirements Position Statement 1G - Socioeconomic Requirements', < https://www.mdba.gov.au/sites/default/files/pubs/WRP-position-statement-1G-socioeconomic-requirements_0.PDF>.

human consumption', whilst also preventing 'high social, economic or national security costs".[33]

This is in circumstances where the 'management of critical human water needs will affect national security',[34] as:

(a) 'water scarcity could lead to conflict in the Asia-Pacific region, and could lead to the destabilisation of geopolitical and economic order;[35]

(b) global water insecurity is becoming a threat multiplier to Australia through ramifications including forced migrations;[36] and

(c) global food trade, which is reliant upon water security, is vulnerable to prolonged and severe droughts in Australia, which is a major food producing region.'[37]

As a result, the EPLJ Article further identified that, and in accordance with the duty imposed by s 86B(3)(b) of the Water Act, States and Territories should consider the obligation to meet critical human water needs, by ensuring that all water resource plans *'ensure the availability and accessibility of water essential:*

(a) *to the realisation of the right to an adequate standard of living, which includes food and water;*

(b) *to reducing national security costs through continued agricultural production; and*

(c) *to the reduction of socioeconomic costs such as loss of production, employment or health standards.'*[38]

In line with this recommendation the Commission should have regard to whether the implementation of clear definitions of critical human water needs, and social, economic and environmental outcomes would ensure that all water resource plans are within the national interest.

4. Climate change risks

Whilst water resources plans must consider the allocation of water to meet basic human and environmental needs (in 'normal' circumstances), the impact of the physical risks of climate change should also be considered in circumstances where such risks are now at the forefront of economic debate and consideration globally.

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[33] Caitlin McConnel, 'Critical Human Water Needs: Failing to Comply with the Objects of the Water Act and Human Rights Obligations', (2019) 36 *Environmental and Planning Law Journal* 212

[34] Caitlin McConnel, 'Critical Human Water Needs: Failing to Comply with the Objects of the Water Act and Human Rights Obligations', (2019) 36 *Environmental and Planning Law Journal* 212

[35] Caitlin McConnel, 'Critical Human Water Needs: Failing to Comply with the Objects of the Water Act and Human Rights Obligations', (2019) 36 *Environmental and Planning Law Journal* 212, 222 citing Will Steffen, Rob Vertessy, Annika Dean, Lesley Hughes, Hilary Bambrick, Joelle Gergis and Martin Rice, 'Deluge and Drought: Australia's Water Security in a Changing Climate', (Report, Climate Council of Australia, 2018) 7,, 67.

[36] Caitlin McConnel, 'Critical Human Water Needs: Failing to Comply with the Objects of the Water Act and Human Rights Obligations', (2019) 36 *Environmental and Planning Law Journal* 212, 222 citing Will Steffen, Rob Vertessy, Annika Dean, Lesley Hughes, Hilary Bambrick, Joelle Gergis and Martin Rice, 'Deluge and Drought: Australia's Water Security in a Changing Climate', (Report, Climate Council of Australia, 2018) 7,, 2.

[37] Above n 4, iii.

[38] Caitlin McConnel, 'Critical Human Water Needs: Failing to Comply with the Objects of the Water Act and Human Rights Obligations', (2019) 36 *Environmental and Planning Law Journal* 212, 221.

On 15 January 2020, the World Economic Forum released its annual Global Risks Report, which lists the top 10 risks in terms of likelihood and impact that will affect the global economy. Significantly, the top five risks in terms of likelihood are all environmental, namely extreme weather, climate action failures, natural disasters, biodiversity loss and human-made environmental disasters,[39] which is 'the first time in the survey's history that one category has occupied all five of the top spots'.[40] Indeed, the increased prevalence and impact of extreme weather events in Australia is clearly demonstrated through the bushfire crisis which gripped eastern Australia in early 2020, which was been directly linked to climate change due to the increase of hotter days, heatwaves, lower rainfall and lengthening fire seasons,[41] as well as 'drought, very dry fuels and soils and heat'.[42]

The devastating consequences of the ongoing Australian bushfires came at a time when Australia was (and arguably still is) enduring its worst drought on record.[43] By way of example, in 2019, rural towns in Queensland and New South Wales ran out of water,[44] whilst level two water restrictions commenced in Sydney in December 2019, for the first time since the Millennium Drought.[45] There were unprecedented fish kills in New South Wales,[46] and the Murray-Darling Basin, which produces 39% of Australia's food and fibre,[47] had its lowest rainfall on record.[48] Conversely, this extreme weather event has occurred in the same year that North Queensland faced catastrophic devastation inflicted by extreme flooding in January/February 2019. The monsoonal flooding, which flooded an area the size of Victoria,[49] left over 500,000 cattle dead,[50] and a damage bill nearing $1.5 billion.[51]

It is clear, therefore, that a present-day understanding of the physical risks of climate change are not unknown in Australia. Indeed the effects of the ongoing drought and natural disasters have been foreseen and forewarned, with researchers identifying that 'the severity of the current drought has been increased by the long-term declines in rainfall and the hotter conditions associated with climate change'.[52] As a result, the importance of ensuring water security (and by extension food security and national security) in light of climate risks, including natural disasters, is paramount.

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[39] World Economic Forum, 'The Global Risks Report 2020' (Report) 15 January 2020, Figure II.
[40] World Economic Forum, 'The Global Risks Report 2020' (Report) 15 January 2020, 4.
[41] Climate Council, 'This is Not Normal: Climate change and escalating bushfire risk' (Briefing Paper) 12 November 2019, 6-9.
[42] Climate Council, 'This is Not Normal: Climate change and escalating bushfire risk' (Briefing Paper) 12 November 2019, 2.
[43] Gregor Heard, 'Drought now officially our worst on record', Farm Online (Article, 18 July 2019) < https://www.farmonline.com.au/story/6281386/drought-now-officially-our-worst-on-record/>.
[44] Anne Davies, Ben Smee and Lorena Allam, 'I don't know how we come back from this: Australia's big dry sucks life from once-proud towns', The Guardian (Article, 14 September 2019) < https://www.theguardian.com/environment/2019/sep/14/i-dont-know-how-we-come-back-from-this-australias-big-dry-sucks-life-from-once-proud-towns>.
[45] Alexandra Smith, 'Sydney faces level 3 water restrictions within months', The Sydney Morning Herald (Article, 10 December 2019) < https://www.smh.com.au/politics/nsw/sydney-faces-level-3-water-restrictions-within-months-20191209-p53i95.html>.
[46] Lorena Allam and Carly Earl, 'For centuries the rivers sustained Aboriginal culture. Now they are dry, elders despair', The Guardian (Article, 22 January 2019) < https://www.theguardian.com/australia-news/2019/jan/22/murray-darling-river-aboriginal-culture-dry-elders-despair-walgett>.
[47] Anthony S Kiem, 'Drought and Water Policy in Australia: Challenges for the Future Illustrates by the Issues Associated with Water Trading and Climate Change Adaptation in the Murray-Darling Basin' (2013) 23 *Global Environmental Change* 1615.
[48] Peter Hannam, 'How bad is this drought and is it caused by climate change', The Sydney Morning Herald (Article, 4 November 2019) < https://www.smh.com.au/environment/climate-change/how-bad-is-this-drought-and-is-it-caused-by-climate-change-20191024-p533xc.html>.
[49] Jessica Johnston, 'Queensland's decade of drought and flooding rain', North Queensland Register (Article, 31 December 2019) < https://www.northqueenslandregister.com.au/story/6540338/decade-of-extremes/>.
[50] Ben Smee, 'Up to 500,000 drought-stressed cattle killed in Queensland floods', The Guardian (Article, 11 February 2019) <https://www.theguardian.com/australia-news/2019/feb/11/up-to-500000-drought-stressed-cattle-killed-in-queensland-floods>.
[51] James Fernyhough, 'Insurers reveal Townsville flood cost, warn region is 'unprofitable', Australia Financial Review (Article, 4 August 2019) <https://www.afr.com/companies/financial-services/insurers-reveal-townsville-flood-cost-warn-region-is-unprofitable-20190804-p52do5>.
[52] Climate Council, 'Deluge and Drought: Australia's Water Security in a Changing Climate', (Report) 13 November 2018, 1.

In the circumstances, and when considering the development of any water resource management plans, States and Territories should consider the impact of climate risks, as well as any national natural disaster or national security strategies, to ensure that all water resource plans are within the national interest and uniform in nature.

5. Natural Disaster Resilience

Since 1860, Australia has faced severe drought 'somewhere on the continent in 82 out of 150 years',[53] lives have been lost in more than 260 bushfires,[54] and there have been over 53 significant floods.[55] Whilst it is arguable that Australia should be used to the death and destruction of natural disasters, each time 'we are surprised by its ferocity - and every disaster seems worse than the last'.[56] In circumstances where natural disasters such as drought and bushfire are inextricably linked to the management of water resources, it is therefore necessary for the Commission to determine how (if at all) national disaster frameworks would - or could - influence water resource management and planning.

A. National Disaster Resilience Framework (Australia)

In December 2009, the Council of Australian Governments (**COAG**) agreed to 'adopt a whole-of-nation resilience-based approach to disaster management' in circumstances where it agreed that a national approach was needed 'to enhance Australia's capacity to withstand and recover from emergencies and disasters',[57] due to the social economic and environmental impacts faced by each natural disaster.[58] Such understanding led to the entering into of the National Partnership Agreement on Natural Disaster Resilience by the Commonwealth of Australia and the States and Territories of Australia, for the purpose of recognising that:

(a) the parties 'have a mutual interest in reducing the impact of, and increasing resilience to, natural disasters'; and

(b) that the parties 'will work together and with other parties, such as volunteers, the private and non-government sectors and local government, to achieve those outcomes'.[59]

The object of the agreement was to ensure Australian communities were resilient to natural disasters, through the development of a National Strategy for Disaster Resilience (the **NSDR**), which was intended to implement a 'high-level guidance on disaster management to federal, state, territories and local governments, business and community leaders and the not-for-profit sector'. [60]

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[53] Matthew Heberger, 'Australia's Millennium Drought: Impact and Responses', (Webpage) < https://www.researchgate.net/publication/289670256_Australia's_Millennium_Drought_Impacts_and_Responses>.
[54] CSIRO, 'Life and house loss database description and analysis (Report), December 2012, 14.
[55] Historical flooding records for Australia were considered for all States and Territories, with nationally significant events considered and included, via Australian Bureau of Meteorology. See, for example, Australian Bureau of Meterology, (Webpage) <http://www.bom.gov.au/tas/flood/flood_history/flood_history.shtml>.
[56] Matthew Heberger, 'Australia's Millennium Drought: Impact and Responses', (Webpage) < https://www.researchgate.net/publication/289670256_Australia's_Millennium_Drought_Impacts_and_Responses>.
[57] Council of Australian Governments (COAG), 'National Strategy for Disaster Resilience', Commonwealth of Australia (Strategy Paper) February 2011, iii.
[58] Council of Australian Governments (COAG), 'National Strategy for Disaster Resilience', Commonwealth of Australia (Strategy Paper) February 2011, iv.
[59] Council of Australian Governments, 'National Partnership Agreement on Natural Disaster Resilience' (Webpage) < http://www.federalfinancialrelations.gov.au/content/npa/environment/national-partnership/past/natural_disaster_resilience_national_partnership.pdf>.
[60] Council of Australian Governments (COAG), 'National Strategy for Disaster Resilience', Commonwealth of Australia (Strategy Paper) February 2011, iii.

The NSDR, which was released in February 2011, acknowledged the 2008 National Security Statement, in circumstances where Australian communities are subjected to 'the impacts of disasters each year'.[61] The NSDR also identified that 'disaster resilience is a shared responsibility for individuals, households, businesses and communities, as well as for governments',[62] in circumstances where all Australian's are increasingly vulnerable to the impact of natural disasters due to the 'increasing complexity and interdependencies of social, technical and infrastructure systems'.[63]

Whilst the NSDR listed (without detailed analysis) many known factors which increase Australia's vulnerability to natural disasters, including lifestyle expectations, demographic changes, domestic migration and the sustainability of volunteer groups,[64] it appears to do nothing more than highlight the obvious sentiment that all 'individuals and communities', as well as governments and business have a shared responsibility to be resilient to natural disasters; placing the onus on all individuals, community organisations and government to consider the incorporation of 'disaster resilient outcomes' in their own way.[65] It does not, for example, provide any guidance as to policy or legislative guidance or expectations for the response to the disaster event, emergency response, compensation and insurance, rebuilding or risk mitigation,[66] or indeed (in the context of drought or fire) any consideration of water resource management.

B. International Disaster Resilience and Climate Change Frameworks

On 9 May 1992, the United Nations Framework Convention on Climate Change (**UNFCCC**) was adopted, and entered into force on 21 March 1994, for the purposes of 'preventing dangerous human interference with the climate'.[67] Through the UNFCCC, Parties including Australia acknowledged that all countries were vulnerable to the effects of climate change, and that a process to address the adverse effects of climate change should be established and adapted.[68] Such process now includes the Paris Agreement.[69]

On 18 March 2015, Australia also adopted the non-binding Sendai Framework for Disaster Risk Reduction 2015 - 2030 (the **Sendai Framework**), which recognises the importance of managing disasters and disaster risk in light of climate change. Specifically, the Sendai Framework provides 'seven clear targets and four priorities for action to prevent new and existing disaster risks',[70] including:

(a) understanding disaster risk;

(b) strengthening disaster risk governance to manage disaster risk;

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[61] Council of Australian Governments (COAG), 'National Strategy for Disaster Resilience', Commonwealth of Australia (Strategy Paper) February 2011, 1.
[62] Council of Australian Governments (COAG), 'National Strategy for Disaster Resilience', Commonwealth of Australia (Strategy Paper) February 2011, iii.
[63] Council of Australian Governments (COAG), 'National Strategy for Disaster Resilience', Commonwealth of Australia (Strategy Paper) February 2011, 1.
[64] Ibid.
[65] Council of Australian Governments (COAG), 'National Strategy for Disaster Resilience', Commonwealth of Australia (Strategy Paper) February 2011, 14.
[66] Daniel Farber, 'Disaster Law in the Anthropocene' in Jacqueline Peel and David Fisher, The Role of International Environmental Law in Disaster Reduction (Brill & Nijhoff, 2016) 55.
[67] United Nations, 'What is the United Nations Framework Convention on Climate Change?' (Webpage) < https://unfccc.int/process-and-meetings/the-convention/what-is-the-united-nations-framework-convention-on-climate-change>.
[68] Ibid.
[69] United Nations, 'The Paris Agreement' (Webpage) < https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>.
[70] UN Office for Disaster Risk Reduction, 'Sendai Framework for Disaster Risk Reduction 2015 - 2030' (Webpage) < https://www.unisdr.org/we/inform/publications/43291>.

(c) investing in disaster risk reduction for resilience; and

(d) enhancing disaster preparedness.[71]

The Sendai Framework provides key considerations that each State, regional and international organisations and all stakeholders should take into consideration all four priorities, and implement as appropriate 'in line with national laws and regulations',[72] if at all.

In that same year, the United Nations Sustainable Development Goals (**UNSDGs**) were adopted by all United Nations Member States, including Australia. The UNSDGs provide a blueprint for social inclusion, environmental sustainability and economic development,[73] and a framework for reporting on key social and environmental risks,[74] including climate change. The United Nations Sustainable Development Goal pertaining to climate change urges Member States to 'take urgent action to combat climate change and its impacts', through the adoption of the Paris Agreement.[75]

C. National Disaster Risk Reduction Framework (Australia)

In 2018, the Department of Home Affairs and the National Resilience Taskforce released the National Disaster Risk Reduction Framework (the **NDRRF**) for the purposes of outlining 'a national, comprehensive approach to proactively reducing disaster risk'. The NDRRF has been described as being the policy framework for reducing disaster risk,[76] and the Australian Government's implementation of the first three priorities of the Sendai Framework.[77]

The drivers for the development of the NDRRF were identified as being that:

(a) natural hazards, such as increasing temperatures, severe fire weather and flooding, are more frequent and intense;

(b) essential services, such as food, water, energy, telecommunications and transport networks are all interconnected and interdependent;

(c) growing populations have led to more people and infrastructure being exposed and vulnerable to natural disasters;

(d) the impacts of natural disasters are now long term and more complex, including reduced education, workforce participation, physical and mental health and diminishing economic resources;

(e) the costs of natural disasters to Australia are approximately $18 billion each year; and

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[71] United Nations, 'Sendai Framework for Disaster Risk Reduction 2015 - 2030' (Framework) 18 March 2015, 14.
[72] Ibid.
[73] The 17 United National Sustainable Development Goals, adopted by all United Nations Member States in 2015 by way of the 2030 Agenda for Sustainable Development, is identified as providing a blueprint for peace and prosperity for people and the planet, now and into the future. United Nations, 'United Nations Sustainable Development Goals' (Web page) <https://sustainabledevelopment.un.org/?menu=1300>.
[74] Australian Securities and Investments Commission, 'Climate risk disclosure by Australia's listed companies' (Report) September 2018, 14.
[75] United Nations, 'Goal 13: Take urgent action to combat climate change and its impacts', (Webpage) < https://www.un.org/sustainabledevelopment/climate-change/>.
[76] Parliament of Australia, 'Emergency management a disaster resilience: a quick guide', (Webpage) < https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp1920/Quick_Guides/EmergencyManagementDisasterResilience>.
[77] Department of Home Affairs, 'National Disaster Risk Reduction Framework' (Framework) 2018, 6.

(f) the momentum to address the financial climate-related risks is building throughout Australia.[78]

The NDRRF, which 'establishes a 2030 vision, goals and priorities for Australia', warns that is it 'not exhaustive nor prescriptive', but that it should be applied holistically across built (physical and social infrastructure), social (networks and essential services), natural (ecosystems and resources) and economic environments (public, private and individual economic activities),[79] with the understanding that climate change is a key driver in disaster risk.[80] It is designed to provide decision-makers with guidance in relation to investment and spending, public policy, development and land use, legislation and resource allocation.[81]

It is arguable then, that any consideration to water resource management in Australia should also have regard to the NDRFF to ensure that all water resource plans are within the national interest.

6. Natural Disasters & the National Security framework

Climate change and natural disasters have been identified in Australia as a national security risk.[82] In recent years, we have seen an escalation in the loss of life, infrastructure, species, ecosystems and income as a result. As our population grows, and the impacts of climate change increase, the disaster risks will only continue to increase.[83]

Despite Australia's long-standing awareness and experiences with natural disasters, and the effect they have on its society, economic and environment; as well as its acknowledgement that climate change is increasing the severity of such natural disasters (arguably since its adoption of the UNFCC in 1992), it is concerning that Australia's water management and national security strategies remain largely silent as to the impact of climate change and national disasters.

The World Economic Forum has highlighted the urgent reality of climate change and its effect on governments, markets and societies in its recent Global Risks Report. It has advised that 'climate-related natural disasters such as … flooding and wildfires are becoming more intense and more frequent', and that near-term existential challenges include:

(a) loss of human life,[84] loss of species,[85] and stress on ecosystems;[86]

(b) food and water crisis through an inability to meet world food production requirements by 2050;[87]

(c) increased migration due to extreme weather events;[88]

(d) exacerbation of geopolitical tensions;[89] and

[78] Department of Home Affairs, 'National Disaster Risk Reduction Framework' (Framework) 2018, 5 - 6.
[79] Department of Home Affairs, 'National Disaster Risk Reduction Framework' (Framework) 2018, 6-7.
[80] Department of Home Affairs, 'National Disaster Risk Reduction Framework' (Framework) 2018, 7.
[81] Department of Home Affairs, 'National Disaster Risk Reduction Framework' (Framework) 2018, 21.
[82] The Senate Foreign Affairs, Defence and Trade References Committee, 'Implication of climate change for Australia's National Security', Australian Government (Report), May 2018, 9 and 30.
[83] Climate Council, 'The Burning Issue: Climate Change and the Australian Bushfire Threat' (Reports) 17 November 2015, 10.
[84] World Economic Forum, 'The Global Risks Report 2020' (Report) 15 January 2020, 30.
[85] World Economic Forum, 'The Global Risks Report 2020' (Report) 15 January 2020, 46.
[86] World Economic Forum, 'The Global Risks Report 2020' (Report) 15 January 2020, 31.
[87] Ibid.
[88] Ibid.
[89] Ibid.

(e) economic and capital market risks, such as lower GDP due to climate-related economic damage,[90] and trade, labour and supply chain disruption.[91]

Climate-related natural disasters are recognised as a threat multipliers in Australia, in circumstances where they are, 'influencing and exacerbating geopolitical risks in our region and in the boarder international community'.[92] Significantly, Australia has already been identified as being 'in the region most vulnerable to the impact of climate change, including security threats, resulting from both the onset of long term trends and increased extreme weather events', and that 'the security and humanitarian risk' in Australia 'is significantly higher than in other regions of the world'.[93]

Indeed, over 10 years ago, the Australian Strategic Policy Institute recognised and forewarned that the physical effects of climate change have 'the potential to effect water shortages, increase health problems including the spread of disease, and increase potential for property damage, (for example, through more flooding, coastal erosion, storm surges and extreme weather events) and disrupt critical infrastructure' … whilst 'increased heat, pests, water stress and diseases will pose adaptation challenges for crop and livestock production ...' in Australia. All consequences, of which are starting to be experienced now in the face of the ongoing drought and bushfires, are significant national security threats.[94]

A. National Security - Federal Government Approach

National security is currently defined by the Australian Government as an ability to keep individuals 'safe and secure' by making decisions on how to 'deal with threats to the nation's security'; 'protect Australia's borders' and 'prevent organised crime'.[95] In considering the Australian Governments national security polices and initiatives, it appears that the threats to Australia's national security are only currently recognised as being terrorism, violent extremism, cyber security, data retention and transport and critical infrastructure.[96] This is despite the Australian Government, under leadership of the then Prime Minister Kevin Rudd, issuing Australia's first national security statement in 2008, which remarkably identified that 'over the long term, climate change represents a most fundamental national security challenge for our future' (**2008 National Security Statement**).[97] He warned that 'significant climate change will bring about unregulated population movements, declining food production, reductions in arable land, violent weather patterns and resulting catastrophic events. This is an area of emerging consequence which will require the formal incorporation of climate change within Australia's national security policy and analysis process'.[98]

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[90] Ibid.
[91] World Economic Forum, 'The Global Risks Report 2020' (Report) 15 January 2020, 33.
[92] World Economic Forum, 'The Global Risks Report 2020' (Report) 15 January 2020, 9.
[93] World Economic Forum, 'The Global Risks Report 2020' (Report) 15 January 2020, 10.
[94] World Economic Forum, 'The Global Risks Report 2020' (Report) 15 January 2020, 13.
[95] Department of Prime Minister and Cabinet, 'National Security', Australian Government (Webpage) < https://www.pmc.gov.au/national-security>.
[96] Australian Government, 'Australian National Security', (Webpage) < https://www.nationalsecurity.gov.au/WhatAustraliaisdoing/Pages/default.aspx>.
[97] The Hon. Kevin Rudd MP, 'House of Representatives National Security Speech', Commonwealth of Australia (4 December 2008) <https://parlinfo.aph.gov.au/parlInfo/genpdf/chamber/hansardr/2008-12-04/0045/hansard_frag.pdf;fileType=application%2Fpdf>..
[98] The Hon. Kevin Rudd MP, 'House of Representatives National Security Speech', Commonwealth of Australia (4 December 2008) <https://parlinfo.aph.gov.au/parlInfo/genpdf/chamber/hansardr/2008-12-04/0045/hansard_frag.pdf;fileType=application%2Fpdf>..

However, it could be arguably inferred that the Australian Defence Force (**ADF**) recognises climate change, or at the very least the ramifications of climate change, as being linked to national security, in circumstances where it defines national security as 'including state and human security', and as 'being inherently linked to the security of health, water, energy, food and economic systems at the local, national, regional and global level'.[99]

In 2013, the Australian Government under the leadership of the then Prime Minister Julia Gillard, released, but did not table to Parliament,[100] a strategy for Australia's national security (the **National Security Strategy**); which has since been removed from government websites.[101] The National Security Strategy aimed to develop 'a unified national security system that anticipates threats, protects the nation and shapes the world in Australia's interest',[102] and defined national security as 'a broad and evolving concept, which concerns environment, and prevention and preparation for, and the response to, threat to people, assets, infrastructure and institutions'.[103] Whilst the National Security Strategy acknowledged that 'there is a mutually reinforcing link between our national security and our economic wellbeing',[104] and that our Australian Defence Force assets 'could be used to assist … to respond to natural disasters';[105] climate change (or the effects of climate change) was not recognised as a pillar reflecting the evolution of Australia's national environment.[106] This is despite the 2008 National Security Statement, which identified climate change as a threat to national security. [107] Moreover, whilst the National Security Strategy acknowledged the existence of the National Strategy for Disaster Resilience which was developed by the Council of Australian Governments (**COAG**) in 2011 for the purposes of implementing a 'national, coordinated and cooperative effort' to 'enhance Australia's capacity to withstand and recover from emergencies and disasters',[108] it was only referred to in the context of building 'disaster resilient communities',[109] and did not allude to climate change as an immediate risk factor for Australia. Rather, climate change was listed as a broader global challenge with the potential for 'longer term national security implications', through 'the increase in frequency and severity of natural disasters, compounded by competition over scarce natural resources', which 'may contribute to instability and tension around the globe'.[110]

In 2016, the Department of Defence, released the 2016 Defence White Paper (the **Paper**), which explained how the Australian Government 'is investing in Australia's defence

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[99] The Senate Foreign Affairs, Defence and Trade References Committee, 'Implication of climate change for Australia's National Security', Australian Government (Report), May 2018, 2.
[100] Samuel Bashfield, 'Australia Needs a New National Security Strategy', The Diplomat (Article, 1 February 2019) < https://thediplomat.com/2019/02/australia-needs-a-new-national-security-strategy/>.
[101] Ibid.
[102] Department of Prime Minister and Cabinet, 'Strong and Secure - A Strategy for Australia's National Security', Commonwealth of Australia (Report) 2013, 5.
[103] Caitlin McConnel, 'Critical Human Water Needs: Failing to Comply with the Objects of the Water Act and Human Rights Obligations', (2019) 36 *Environmental and Planning Law Journal* 212, 218.
[104] Department of Prime Minister and Cabinet, 'Strong and Secure - A Strategy for Australia's National Security', Commonwealth of Australia (Report) 2013, 4.
[105] Department of Prime Minister and Cabinet, 'Strong and Secure - A Strategy for Australia's National Security', Commonwealth of Australia (Report) 2013, 5.
[106] Department of Prime Minister and Cabinet, 'Strong and Secure - A Strategy for Australia's National Security', Commonwealth of Australia (Report) 2013, 15.
[107] The Hon. Kevin Rudd MP, 'House of Representatives National Security Speech', Commonwealth of Australia (4 December 2008) <https://parlinfo.aph.gov.au/parlInfo/genpdf/chamber/hansardr/2008-12-04/0045/hansard_frag.pdf;fileType=application%2Fpdf>..
[108] Council of Australian Governments (COAG), 'National Strategy for Disaster Resilience', Commonwealth of Australia (Strategy Paper) February 2011, v.
[109] Department of Prime Minister and Cabinet, 'Strong and Secure - A Strategy for Australia's National Security', Commonwealth of Australia (Report) 2013, 21.
[110] Department of Prime Minister and Cabinet, 'Strong and Secure - A Strategy for Australia's National Security', Commonwealth of Australia (Report) 2013, 31.

capabilities to strengthen Australia's security in the more complex strategic environment Australia will face in the years ahead'.[111] Whilst climate change is identified in the Paper as being attributable to state fragility, and despite the ADF's recognition of climate change as a national security threat; it is only in the context of states within Australia's immediate neighbourhood (such as the Indo-Pacific Region) which the Department of Defence considers will be impacted by 'uneven economic growth, crime, social, environmental and governance challenges and climate change', and not, according to the Paper, Australia.[112] Moreover, whilst the Paper denotes that 'climate change will see higher temperatures, increased sea-level rise and will increase the frequency and intensity of extreme weather events', the consequences such as environmental degradation and food shortages are identified as challenges only applicable to countries 'in Australia's immediate region',[113] and again, according to the Paper, not Australia. Indeed, in the Paper the only impact in the context of climate change is identified as being that sea level rises and more extreme weather events will put ADF 'facilities at risk of damage'.[114]

Moreover, and in 2018, the *Security of Critical Infrastructure Act 2018* (Cth) (**SCI Act**) was enacted for the purpose of imposing powers, functions and obligations applicable to the protection of critical infrastructure assets, which damaged would significantly impact the social or economic stability of Australia, its national defence or its national security.[115] Helpfully, the EPLJ Article considered this issue, and explained that:

> *'In accordance with s 5 of the SCI Act, national security was defined as being Australia's defence, security or international relations, whilst critical water asset was defined as including a water system or network which delivered services to at least 100,000 water connections. Despite the register of critical infrastructure assets remaining confidential,[116] it is arguable that the Murray-Darling Basin would be deemed a critical infrastructure asset'*.[117]

B. Enquiry into Australia's National Security

In May 2018, the Senate conducted an inquiry into the implications of climate change on Australia's national security (**2018 Senate Inquiry**), in circumstances where countries such as the United States of America and the United Kingdom have overtaken Australia 'comprehensively in terms of including climate change priorities in national security'.[118]

Significantly, the 2018 Senate Inquiry recognised that climate change is a 'current and existential national security risk' affecting the Australian community and economy.[119] The threats to Australia's national security were identified as being:

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[111] Department of Defence, '2016 Defence White Paper', Commonwealth of Australia (Report) 2016, 13.
[112] Department of Defence, '2016 Defence White Paper', Commonwealth of Australia (Report) 2016, 41.
[113] Department of Defence, '2016 Defence White Paper', Commonwealth of Australia (Report) 2016, 56.
[114] Department of Defence, '2016 Defence White Paper', Commonwealth of Australia (Report) 2016, 102.
[115] Section 9(2) of the *Security Infrastructure Act 2018* (Cth).
[116] See ss 19 - 22 of the *Security Infrastructure Act 2018* (Cth).
[117] Caitlin McConnel, 'Critical Human Water Needs: Failing to Comply with the Objects of the Water Act and Human Rights Obligations', (2019) 36 *Environmental and Planning Law Journal* 212, 218.
[118] The Senate Foreign Affairs, Defence and Trade References Committee, 'Implication of climate change for Australia's National Security', Australian Government (Report), May 2018, 30.
[119] The Senate Foreign Affairs, Defence and Trade References Committee, 'Implication of climate change for Australia's National Security', Australian Government (Report), May 2018, 9.

(a) extreme weather and physical effects, including recurring and longer fire seasons;[120]

(b) the risk of physical and mental illness, infectious diseases, and death due to exposure to the increased intensity, duration and frequency of extreme weather events,[121] as well as aeroallergens and air pollution;[122]

(c) food and water security through the reduction of available water sources and agricultural production,[123] which could lead to social and political unrest;[124]

(d) direct damage to the economy through climate change litigation, direct damage to assets and the collapse of markets;[125] and

(e) climate-related displacement which could directly affect Australia's ability to manage and control its border and migration,[126] and could also lead to conflict.[127]

Through consideration of the opportunities for improvement to Australia's approach to national security in light of climate change, the 2018 Senate Inquiry identified 11 recommendations to increase national resilience, which relevantly included the following:

(a) that the Commonwealth Government develop a climate security white paper to guide a whole of government response to climate change risks;[128]

(b) that the Commonwealth Government consider the need for a dedicated climate security leadership position in the Home Affairs portfolio to facilitate coordination on climate resilience issues, including disaster risk reduction, infrastructure planning, community health and well-being, and emergency management;[129]

(c) that the Department of Defence consider the need for a senior leadership position to assist in planning and managing the delivery of domestic and international humanitarian assistance and disaster relief;[130] and

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[120] The Senate Foreign Affairs, Defence and Trade References Committee, 'Implication of climate change for Australia's National Security', Australian Government (Report), May 2018, 11 - 12.
[121] The Senate Foreign Affairs, Defence and Trade References Committee, 'Implication of climate change for Australia's National Security', Australian Government (Report), May 2018, 13 - 14.
[122] The Senate Foreign Affairs, Defence and Trade References Committee, 'Implication of climate change for Australia's National Security', Australian Government (Report), May 2018, 14.
[123] The Senate Foreign Affairs, Defence and Trade References Committee, 'Implication of climate change for Australia's National Security', Australian Government (Report), May 2018, 14.
[124] The Senate Foreign Affairs, Defence and Trade References Committee, 'Implication of climate change for Australia's National Security', Australian Government (Report), May 2018, 17.
[125] The Senate Foreign Affairs, Defence and Trade References Committee, 'Implication of climate change for Australia's National Security', Australian Government (Report), May 2018, 15.
[126] The Senate Foreign Affairs, Defence and Trade References Committee, 'Implication of climate change for Australia's National Security', Australian Government (Report), May 2018, 22.
[127] The Senate Foreign Affairs, Defence and Trade References Committee, 'Implication of climate change for Australia's National Security', Australian Government (Report), May 2018, 25.
[128] The Senate Foreign Affairs, Defence and Trade References Committee, 'Implication of climate change for Australia's National Security', Australian Government (Report), May 2018, 92 - 93.
[129] The Senate Foreign Affairs, Defence and Trade References Committee, 'Implication of climate change for Australia's National Security', Australian Government (Report), May 2018, 95.
[130] Ibid.

(d) that the Commonwealth Government review the National Partnership Agreement on Natural Disaster Resilience (entered into in 2009 for the purposes of developing the National Disaster Resilience Framework).[131]

As aforementioned, and in the same year at the 2018 Senate Inquiry, the Department of Home Affairs released the National Disaster Risk Reduction Framework (the **NDRRF**), which could arguably be described as a review into the National Partnership Agreement on Natural Disaster Resilience, in circumstances where it draws upon the NDRS, whilst also implementing the first three priorities of the Sendai Framework.

The NDRRF vision is for all sectors of Australian society to make disaster risk-informed decisions; be accountable for reducing risks within their control; and invest in reducing disaster risk.[132] To do so, the NDRRF provides four priorities for the purposes of taking action in Australia to reduce disaster risk,[133] and then provides detailed examples of the recommended actions to be taken in accordance with each priority. Arguably, the following recommended actions have the potential to impact national security, or at the very least demonstrate how natural disasters data or planning could - and should - intertwine with national security strategy:

(a) understand disaster risk through the identification of data, information and resource gaps pertaining to climate change impacts on natural disasters;

(b) make accountable decisions through the identification of the highest priority disaster risks and mitigation opportunities, whilst also maintaining planning and development practices that adapt to rapid social, economic, environmental and cultural change;

(c) enhanced investment through the identification of current and future potential income and funding streams; and

(d) the establishment of clear government pathways and responsibility for the pursuit of disaster reduction projects.

The NDRFF did not, however, recognise in any way the explicit threats to Australia's national security as identified by the 2018 Senate Inquiry which can be linked to natural disasters, namely:

(a) that extreme weather and the physical effects of climate change are resulting in longer fire seasons;[134]

(b) the natural disasters increase the risk of physical and mental illness, infectious diseases, and death,[135] as well as aeroallergens and air pollution;[136]

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[131] The Senate Foreign Affairs, Defence and Trade References Committee, 'Implication of climate change for Australia's National Security', Australian Government (Report), May 2018, 96 - 97.
[132] Department of Home Affairs, 'National Disaster Risk Reduction Framework' (Framework) 2018, 8.
[133] Department of Home Affairs, 'National Disaster Risk Reduction Framework' (Framework) 2018, 8.
[134] The Senate Foreign Affairs, Defence and Trade References Committee, 'Implication of climate change for Australia's National Security', Australian Government (Report), May 2018, 11 - 12.
[135] The Senate Foreign Affairs, Defence and Trade References Committee, 'Implication of climate change for Australia's National Security', Australian Government (Report), May 2018, 13 - 14.
[136] The Senate Foreign Affairs, Defence and Trade References Committee, 'Implication of climate change for Australia's National Security', Australian Government (Report), May 2018, 14.

(c) that food and water security is compromised through the reduction of available water sources and agricultural production,[137] which could lead to social and political unrest;[138]

(d) that there is direct damage to the economy, through damage to assets and the collapse of markets;[139] and

(e) that displacement could directly affect Australia's ability to manage migration.[140]

In the circumstances, the Commission should consider how effective water resource management will impact (and effect) national security.

7. Evaluation

Despite Australia's long-standing awareness and experiences with natural disasters, and the effect they have on its society, economic and environment; as well as its acknowledgement that climate change is increasing the severity of such natural disasters (arguably since its adoption of the UNFCC in 1992), it is concerning that Australia's water management strategies are largely silent as to the impact of climate risks and national disasters, and fail to adequately consider the impact water scarcity could have on our national security.

This is despite the Australian Strategic Policy Institute advising over 10 years ago that the physical effects of climate change will increase water shortages, increase health problems, damage property and damage critical infrastructure and food and fibre production.[141] All impacts of which, have been identified as a national security risk in the 2018 Senate Inquiry, in circumstances where all Australian's are increasingly vulnerable to the impact of natural disasters due to the 'increasing complexity and interdependencies of social, technical and infrastructure systems'.[142]

The NWI is the national blueprint for water reform in Australia, and provides that the better management of Australia's water resources is a national issue. As a result, it is arguable that the NWI, and any subsequent legislation or policy pertaining to water resource management in Australia should directly correlate with the development of national climate risk and national security strategies. This is particularly in circumstances where:

(a) similar western countries, including the United Kingdom have adopted national security strategies which acknowledge and plan for the impacts on its national security, including climate change,[143] natural disasters,[144] and water security;

[137] The Senate Foreign Affairs, Defence and Trade References Committee, 'Implication of climate change for Australia's National Security', Australian Government (Report), May 2018, 14.
[138] The Senate Foreign Affairs, Defence and Trade References Committee, 'Implication of climate change for Australia's National Security', Australian Government (Report), May 2018, 17.
[139] The Senate Foreign Affairs, Defence and Trade References Committee, 'Implication of climate change for Australia's National Security', Australian Government (Report), May 2018, 15.
[140] The Senate Foreign Affairs, Defence and Trade References Committee, 'Implication of climate change for Australia's National Security', Australian Government (Report), May 2018, 22.
[141] The Senate Foreign Affairs, Defence and Trade References Committee, 'Implication of climate change for Australia's National Security', Australian Government (Report), May 2018, 13.
[142] Council of Australian Governments (COAG), 'National Strategy for Disaster Resilience', Commonwealth of Australia (Strategy Paper) February 2011, 1.
[143] HM Government, 'National Security Strategy and Strategic Defence and Security Review 2015', (Report) November 2015, 65.
[144] HM Government, 'National Security Strategy and Strategic Defence and Security Review 2015', (Report) November 2015, 21.

(b) despite Australia's national security focus being on terrorism, extremism and cyber security, Australia's critical infrastructure assets are defined in s 9 of the *Security of Critical Infrastructure Act 2018* (Cth) (**SCI Act**) as including assets pertaining to water; and

(c) the NDRRF has identified that Australian's are highly depended upon essential services such as food and water, which are all interconnected and interdependent; and susceptible to the impacts of climate risks and natural disasters.

As a result, and by using this submission as a guide, the Commission should consider how the management of Australia's water resources can be undertaken in direct correlation with the development of an appropriate national security and national climate risk strategy, for the adequate protection of our water resources.