Report of the Freshwater Leaders Group

TO THE MINISTER FOR THE ENVIRONMENT

July 2019

Contents

Snapshot of our report

1. New Zealanders have a deep connection to waterways. Freshwater is central to all New Zealanders whether as part of daily life, recreation, business, or because it holds a special cultural significance.

2. Over many years, the quality of New Zealand's waterbodies has become degraded. Since 1991 the Resource Management Act 1991 (RMA) has provided for sustainable management. This has included sustaining the potential of natural and physical resources to meet the needs of future generations; safeguarding the life-supporting capacity of water and ecosystems; and avoiding, remedying, or mitigating adverse effects of activities on the environment. However, water quality continues to decline in many catchments around New Zealand today.

3. Problems with freshwater quality have received increasing attention over the last decade. A large number of people from Government, NGOs, and industry sat around the table over the past 10 years as part of the Land and Water Forum (LAWF), publishing their work in numerous reports. The first National Policy Statement–Freshwater Management (NPS-FM) was published in 2011 and amendments were made in 2014 and 2017. Each of these set higher and progressively more complete standards to be achieved by regional councils, cementing ecosystem health as a compulsory value of which all regional plans must take account.

4. However, it is becoming increasingly clear that more must be done. The reports, *Our fresh water 2017* and *Environment Aotearoa 2019* reinforce the evidence of declining water quality and ecosystem health. The urgent need to take further action to stop our freshwater from becoming worse, and to return our freshwater bodies to a healthy state, is widely recognized.

5. The Government's *Essential Freshwater* (October 2018) paper sets out objectives and a path forward for better water management. The Freshwater Leaders Group (FLG) was established by the Government to provide advice on the developing policy.

6. The FLG unanimously supports the objectives in *Essential Freshwater*, and wants action taken to:

   – bring our water resources to a healthy state within a generation

   – take immediate steps to stop our water becoming worse, and

   – achieve an efficient and fair allocation system.

7. Te Mana o te Wai is already recognised in the NPS-FM as an integral part of the freshwater management framework. We have considered the framework of Te Mana o te Wai and developed our own thinking on the foundational principles for freshwater management. The most important of these is that the health of the water comes first, and essential human needs come next. Only then can freshwater be allocated for economic use. Farming to

provide food and fibre is a fit and proper activity and its use of water means that it will have an environmental footprint and some waterbodies will not be pristine. But it needs to be carried out within environmental limits. Further, the allocation of water for economic gain must recognise that water is a communal resource. It also places obligations on the user to protect the ecosystem health of the freshwater body, meeting all the costs of doing so.

8. To improve water quality, major changes are needed to the way that we as a country protect and manage our land and water. While we have focused primarily on the agricultural sector, these changes need to be integrated with the way we manage urban water, the regulation of forestry, climate change policy, and any other related policy areas.

9. **Significant improvements to the NPS-FM** are needed to ensure that regional plans play their part in improving the quality of water over time. These involve:
   - providing greater protection for ecosystem health and human health by more clearly defining the attributes that make freshwater healthy, and setting clear and appropriate bottom lines that will support and enhance freshwater ecosystem health and quality
   - protecting the quality and mauri of mahinga kai; and the quality, abundance and diversity of fish gathered from fresh water bodies by making this a compulsory national value in the NPS-FM
   - requiring regional councils to revise their regional plans to include all changes to the NPS-FM and have the new plans in place and operative by 2025
   - having a faster planning process so that 2025 is realistic for councils and communities
   - setting dates by which each regional council must achieve the limits in their plans
   - requiring councils to regularly measure and report progress against freshwater ecosystem health and water quality objectives.

10. Before the new regional plans are in place, there is a serious risk of water quality declining further. To prevent this, the following immediate changes are needed:
    - a National Environmental Standard (NES) to **stop poor agricultural practices that have an impact on water quality**. This would control high risk land use activities, prevent excessive Nitrogen leaching, control land use change and intensification, and exclude stock from waterways
    - an improved National Environmental Standard-Plantation Forestry to **stop poor forestry practices**. These changes would be aimed at preventing excessive loss of sediment to waterways. They would also control areas selected for plantation forestry, and the planting and harvesting practices used.
    - a complete **halt to the loss of wetlands**.

11. The Government should also, as quickly as possible, identify **at-risk catchments** that are most at risk of irretrievable damage in the short to medium term. There should be a clear action plan for each of these priority catchments to stop further degradation.

12. **Land and Environment Plans (LEPs)**, properly constructed, are a useful tool for farmers to manage their activities according to freshwater limits set by regional councils. LEPs should be developed using a risk-based approach based on the underlying natural resources of each farm. However, experience demonstrates that they cannot take the place of a strong rules-based system for environmental protection. Most (although not all) of the FLG is of the view they should be driven by industry and farmers rather than being used as part of the regulatory regime. This report sets out some of the key policies for making them work well.

13. **Changes to governance are needed**. A new central government agency (a freshwater commission) should be established. It would have a key role in the stewardship and implementation of better water management. In the meantime, greater use should be made of existing ministerial powers to compel faster change by regional councils. We have recommended ways of improving governance in regional councils.

14. We also need **better knowledge and models**. Significant improvements to a key model, OVERSEER, are needed to make it fit for purpose, including changing its ownership. New tools are needed for a broader list of discharges (particularly sediment) to manage land practice change and new allocation systems. These tools will all need significant investment.

15. As limits become enforced, new allocation models will be required. We have developed a number of principles that should be used when developing **an efficient and fair policy to allocate** nitrogen, sediment, and other discharges; and the allocation of water quantity. These principles, as with all of our work, start from the premise that the health of the water comes first, and human health second. They recognise that we should treat water as a communal resource that New Zealand must retain control over, and acknowledge that any allocation system should be dynamic and give certainty to businesses. The best allocation approach is one based on the inherent natural capital of the land and waterbodies.[1] This would take a significant amount of work and there are many complex transition issues, including the question of grandparenting,[2] which most (but not all) of the FLG oppose.

16. We think that a quantitative assessment of potential impacts of the package might be needed –in terms of the expected effect on freshwater quality, ecosystem health and human health, and the possible broader social and economic effects.

17. Finally, this report briefly discusses the considerable implementation challenges involved in improving the way we manage water, and the large number of other non-regulatory steps that will need to be taken.

18. Appendix 1 sets out the membership of the Freshwater Leaders Group. The FLG members have carried out this work in their personal capacity. As a group we have worked collegially and respectfully, and are largely in agreement on what needs to happen. Where that is not the case, this report identifies our different views.

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[1] One member does not believe that natural capital is the best allocation approach.

[2] The Grandparenting principle uses historical nitrogen (N) use to give each property an N Discharge Allowance.

Introduction

19. Water sustains life, supports our unique ecosystems and species, is part of our heritage and identity, and is a taonga to Māori.

20. New Zealanders have a deep connection with our waterways – we fish, swim, recreate, collect mahinga kai, get drinking water, and use the freshwater they provide as part of our daily life for washing and sanitation. Our waterways are used to produce food and fibre, support our industries, they are central to tourism, and are used to generate electricity.

21. The wellbeing of our waterways, our air, climate, land, and flora and fauna are interconnected. The health of our communities depends on the health and sustainable management of our waterways. Our future economic prosperity relies on water and its sustainable management.

22. The Resource Management Act 1991 (RMA) provides for sustainable management. This includes sustaining the potential of natural and physical resources to meet the needs of future generations, safeguarding the life-supporting capacity of water and ecosystems, and avoiding, remedying, or mitigating adverse effects of activities on the environment.

23. Despite this, over many years human activity has resulted in many waterways becoming degraded. In both urban and rural areas the health of many freshwater bodies and the ecosystems they support is declining. We have treated water as an abundant resource and this has had environmental consequences. The recent reports, *Our fresh water 2017* and *Environment Aotearoa 2019*, provide ample evidence of declining water quality and ecosystem health. The pressure on water will become greater in some places as the effects of climate change increase.

24. Concern about the quality of freshwater, and responses to that concern, are not new. The first NPS-FM was put in place in 2011, and it has been amended twice. The Land and Water Forum (LAWF) provided six reports recommending changes to the regulatory regime and to government and industry practice. The latest LAWF report was published in May 2018 after 10 years of government, NGOs, and industry working together to define the issues and develop solutions. There is an increasing awareness, and level of agreement, about what must be done. Action is needed.

25. The Government's *Essential Freshwater* document recognises that further urgent action is needed. Its sets out three clear objectives and a path forward. It reflects New Zealanders' strong desire to immediately stop further degradation of our waterways, to reverse past damage, and to move to an efficient and fair way of allowing the use of water and waterways, having regard to all interests, including Māori and existing and potential new users. The FLG was established by the Government to provide advice on the development of the policy.

26. The FLG agrees with the *Essential Freshwater* objectives. We support the Government's vision for water and land use that will put water first. This will result in restoring freshwater ecosystem health within a generation, and stopping water quality declining within the next five years. This should be done within an overall sustainable management framework involving the integrated management of land and water, biodiversity, and climate change.

27. We recognise the importance of freshwater to businesses and the economy, but believe that protecting the water first is foundational to the strategic move from volume to value that most New Zealand industries, businesses, and communities aspire to.

Our foundations

28. Te Mana o te Wai is the integrated and holistic well-being of a freshwater body and is recognised in the NPS-FM as an integral part of the freshwater management framework. Better tools and regulation for governance and management practice should aim towards Te Mana o te Wai.

29. The FLG's principles on which a system for water quality and allocation should be based are set out here.

    – The water itself comes first. Maintaining the health of waterbodies must be the first priority.

    – Providing for essential human needs, such as drinking water, must come second.[3]

    – Taking water from waterbodies, or the right to discharge to water into them for economic gain, must be subservient to providing for the ecosystem health of the water body, and essential human needs. Land users can take and discharge into water, but only in a way that ensures the health of the waterbody and people. Users need to cover the full economic and environmental costs they impose through their take and/or discharge to the water.

    – Those taking water or discharging to water must demonstrate that they adhere to Te Mana o te Wai, as expressed in national and regional objectives, policies and rules, as part of gaining and maintaining any right to water.

    – Given the complexity and magnitude of the challenge to halt the decline and reverse the damage to the country's freshwater, a precautionary approach[4] is required when setting limits and allocating against these limits: where there is uncertainty, regulations should favour the protection of freshwater values.

    – Most members believe that grandparenting of rights to take water or to discharge into water is not equitable or ecologically sound. Clear signalling by the Government that there will be no grandparenting of nutrients and sediment discharges is critical to prevent perverse behaviour, such as gold rushing, before new rules are in place.[5]

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3 However, this does not necessarily mean that a drinking water standard is achievable or desirable for all waterways. Water for sanitation is an essential human need, but care is needed in how this is framed so as not to allow a free ride for certain activities that might fall under that heading (such as sewage treatment).

4 One of the Group does not agree with the use of the precautionary approach in this context.

5 Two members support grandparenting for water quantity and takes, while one member supports grandparenting of (reducing) discharge rights in over-allocated and fully allocated catchments in order to provide assurance to current landowners during a transition to meet a discharge limit.

30. We believe that the involvement of iwi in the governance of water, and the rights and interests of iwi and hapū in respect of water, are a matter for the Crown to resolve with Māori. Therefore, we have not taken a view on these matters. That said, the importance of resolving any matters between the Crown and iwi and hapū in terms of freshwater is important to achieving all of the objectives of *Essential Freshwater*. The quicker these matters can be resolved between the parties, the better.

Major findings

31. Stopping the decline and achieving material improvements in freshwater quality is difficult and complex. Water quality varies enormously within and between catchments and over time. Catchments are complex, as are the reasons for the quality of the water they contain. The relationship between what is happening on the land and the resulting water quality varies from place to place. Determining the precise attributes of water health is difficult, and there are limits to how well we are able to measure the effects of actions taken on land to improve waterbodies. Despite this complexity, action still needs to be taken and we have enough information to take positive steps.

32. We have approached our work from two *Essential Freshwater* objectives – what needs to happen to:

    – first, promote restoration activity to bring freshwater resources, waterways and ecosystems to a healthy state within a generation

    – second, stop the state of our freshwater resources, waterways and ecosystems getting worse, and start making immediate improvements so that water quality is materially improving within five years.

33. The **first** of these will be best achieved by making improvements to the NPS-FM so that the attributes for ecological health and human health in water are more clearly defined, national water quality bottom lines are appropriately and consistently set, mahinga kai and fishing/food gathering is recognised, and the planning obligations of regional authorities are clarified. This should involve:

    – requiring regional councils to achieve the required freshwater quality standards by developing plans appropriate for each catchment

    – making changes to the RMA to establish a faster and more efficient planning process, with all new plans being operative by 2025

    – having the Minister for the Environment approve regionally-proposed dates by which the freshwater quality outcomes of these plans need to be achieved

    – ensuring that the structures, governance and capacity of central and local government to do this are improved, including through establishing a new freshwater commission

    – improving models and tools (including OVERSEER)

    – supporting land and environment plans.

34. The **second** of these needs urgent short-term action. We believe that:

    – a number of high risk land use activities need to be controlled immediately through a national environmental standard (NES)

    – wetlands need full and immediate protection

- at-risk catchments that could be irreversibly damaged need immediate action taken to address this.

35. This report also sets out some principles for the way that nutrients, other discharges, and water quantity should be allocated between users in the future. It comments on some key implementation issues.

Scope of this report and Integration

36. Integration is a key concept for water management, for a number of reasons: environmental, social, cultural, and economic expectations need to be integrated, both centrally and locally; there are complexities involved in integrated catchment management; a wide range of groups need to be involved in developing national and local water initiatives; and there is a need for integrated policies across ministries and the Government.

37. This report is primarily about the necessary changes that affect the agricultural sector. This is not to ignore or downplay the impacts on water quality from urban sources or other areas such as plantation forestry – we want the Government's related reviews to ensure that those sources are addressed just as rigorously. We know that this report only tells part of the story about what needs to happen, and does not discuss a number of other matters that are important to freshwater management.

38. The matters that need to be considered in an integrated way include:
    - making sure that **climate change policy** is well aligned with freshwater policy
    - ensuring that the way **flow regimes** are set is adequate and meets the ecosystem health needs of the waterbody
    - the integration of work on **allocation for both discharges and water takes**
    - the treatment of urban water issues through the Government's Three Waters review. Many catchments cover urban and rural areas: while we have focused on ways to protect ecosystem health from the activities of the agricultural sector, the **same level of rigour needs to be applied to the impact of urban activities** on waterways
    - **the review of the National Environmental Standard on Plantation Forestry (NES-PF).** New standards for the selection of land for plantation forestry, and the planting and harvest of plantation forestry, should be introduced immediately though the NES-PF. Rules should be developed to prevent sediment contamination of freshwater bodies to ensure that these high risk activities in the forestry sector are managed in a consistent way with agricultural land practice set out in the proposed NES and revised NPS-FM
    - ensuring that the combined impact of a number of government policies creates the **right balance between native and exotic planting**
    - in many areas there is a **direct link between water quality and the quality of the coastal marine environment and its ecosystems**
    - how **users of water (whether through takes or discharges) should share the value** they are receiving from a public resource
    - a **range of other complementary and related government policies** – for example, biodiversity and regional development.

39. Not having integrated policy will place at risk the outcomes being sought by *Essential Freshwater*, or risk the changes being made being seen as unfair. It is essential that changes to water management arising out of *Essential Freshwater* are well integrated with these important related policy areas.

i) Making our waterways healthy within a generation

40. **To put in place the foundations for water quality improvements within a generation, significant improvements are needed to the NPS-FM.** These improvements will require regional councils to improve their regional plans, and have them in place and operative by 2025. This will position regional plans to drive long-term improvements to freshwater quality. This section sets out those improvements.

New and improved attributes in the NPS-FM

41. The NPS-FM needs to protect ecological health and human health. To achieve this, a wider set of clear and agreed scientific definitions of the **attributes for water ecosystem health**[6] should be included in the NPS-FM. These are critical. These attributes set a national bottom line for water quality, and are used:
    - by regional councils to set limits for contaminants and water takes, and
    - to identify the level of over-allocation[7] of individual catchments, and the magnitude of change required to bring the waterbody back to a healthy state.

42. Reaching agreement on the attributes and bottom lines is fundamental to the integrity of the entire regulatory framework. We have received advice from the Freshwater Science and Technical Advisory Group, and support:
    - dissolved Inorganic Nitrogen (for ecosystem health) being defined as an attribute (which will also result in some desirable simplification of attribute tables in the National Objectives Framework (NOF))
    - dissolved Reactive Phosphorous being defined as an attribute for ecosystem health
    - Dissolved Oxygen measures for all rivers and lakes
    - several biotic indicators being included in the NOF – a fish index of biotic integrity, periphyton, and macroinvertebrates (including any improvements that can be made to the Macroinvertebrate Community Index measure currently in the NOF)
    - turbidity and deposited sediment being included as attributes in the NOF
    - lake macrophytes

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6 This includes the freshwater habitat required for indigenous freshwater species, and for trout and salmon.

7 Over-allocation and over-allocated is the situation where the resource (a) has been allocated to users beyond a limit; or (b) is being used to a point where a freshwater objective is no longer being met. This applies to quantity and quality.

- guidance on wetlands, and the periphyton attribute
- the investigation of ecosystem metabolism as a possible attribute to measure ecosystem health, and further work being carried out on habitat quality.

43. **Setting limits for human health** is important to deliver on public expectations and our ambitions for freshwater. New Zealanders should feel safe to **swim and have recreational contact** with freshwater bodies in their local area. We want to see water microbial contamination levels that allow swimming standards to be met in water bodies that people wish to swim in, and any areas used for gathering of mahinga kai, or recreational use such as fishing.

44. We recommend that:
    - in addition to primary contact recreation, drinking water quality and mahinga kai are provided for. Drinking water sources must also be protected.
    - the adequacy of the existing *E.coli* attribute and how it is applied be reviewed
    - *E.coli* and cyanobacteria attributes for lakes and rivers be reviewed
    - further attributes and limits for key pathogens not adequately indicated by *E.coli* be developed
    - the Government should set out how these attributes should be monitored, reported on, and enforced.

45. There also needs to be an integrated review of human health attributes across other relevant programmes of work – in particular the Government's Three Waters review, and the way that the New Zealand Coastal Policy Statement deals with pathogens in the coastal environment and estuaries.

46. A group with the necessary expertise – for example, ecologists, medical professionals, and microbiologists – should carry this work out as quickly as possible within *Essential Freshwater* timelines.

Other Changes to the NPS-FM

47. There are complementary changes that should be made to the NPS-FM. Appendix 1 to the NPS-FM does not currently have **mahinga kai and fishing/food gathering** as compulsory national values that councils must provide for. These values address kai that is safe to harvest and eat, the mauri of the place, and support the numbers and diversity of fish species, including indigenous species, trout and salmon. These values should be compulsory.

48. **Councils should be regularly required to show, up to 2035, that they are making demonstrable progress** towards meeting the water quality limits set out in their regional plan, and that this progress is as swift as practicable. This would be monitored and reported on regularly by central government. Some changes to the RMA are needed to ensure that consenting processes give effect to plans.

49. In addition, the NPS-FM should **require councils to have plans that will achieve the limits required by the NPS-FM by a specified date that is nationally approved**, not just regionally determined. This date is likely to vary catchment by catchment and will need to take into account matters such as biophysical circumstances – for example, discharge lag times, and earthquake events. We do not have the necessary information to develop these dates but we believe that it should be done to give greater certainty that limits will be met. The dates should be challenging and should be proposed by each regional council and approved by the Minister for the Environment.[8] Providing advice on this would be a key role of a proposed new freshwater commission.

50. Regional councils will have a challenging task to have operative plans in place by 2025. The current planning process is complex, expensive and time-consuming. **A faster planning process is essential**, but will also need to take into account several important matters:

    – addressing the interests of underrepresented parties during the planning process

    – developing an efficient way of resolving disputes about science during the proposed planning process

    – ensuring that the control of and access to important data and models is available to all interested parties, as failure to provide this can skew the planning process.

    – Providing a careful timely and efficient transition from current plan-making that is underway to the new process.

51. There is also a need to resolve the apparent disconnect between regional plans (which must 'give effect' to national instruments) and consents (which must 'have regard' to regional plans).

ii) Immediate action to prevent further deterioration

52. Before new regional plans are in place, there is a serious risk of further deterioration in freshwater health in already over-allocated catchments or catchments approaching limits. We also do not want to see perverse outcomes where land owners rush development or maintain higher than optimal discharges in order to create perceived future opportunity ahead of plan changes.

53. **The Government should put an immediate stop to particular agricultural practices** that have a large impact on water quality, and help 'hold the line' before the improved plans are in place. This should be done through an NES.

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[8] One member of the Group is of the view that the dates should be determined by councils with no Ministerial role – while the NPS-FM should give guidance, the pace of change needs to reflect the challenges in different catchments and the ability of different communities to adjust and should not be centrally determined.

54. The following matters should be included:[9]

a) Preventing excessive Nitrogen (N) losses from farm land – this should bring the excessive leaching of N into line within a period of 1-2 years. It would necessarily be a blunt tool that will help 'hold the line' until 2025 when revised regional plans will be operative. The FLG discussed a range of ways this might be implemented:

- some in the group think a single number approach should be used whereby an upper limit would apply nationally
- others have suggested a regional approach where regional and Freshwater Management Unit (FMU) profiles are established using either OVERSEER data or industry data (eg, Fonterra and Beef + Lamb) to set a limit at the upper quartile for each FMU or region. The approach would need a way of avoiding grandparenting high losses.
- OVERSEER would not be suitable as a tool for vegetable growers – they should not get special treatment, but the Government should develop a way of ensuring equal treatment with other sectors.

b) Control High Risk Land Use Activities (HRLUAs) – there are a number of HRLUAs that pose a serious risk of further deterioration in freshwater health. These are:[10]

- feedlots
- intensive stock holding areas
- intensive winter grazing on forage crops
- irrigation on vulnerable soils.
- Winter forage crops grazed in situ on highly permeable soils (such as gravels or river accretion) or mole and tile drained soils.

These practices need to be controlled. Some members believe that these controls should be applied nationally – others consider that they should only apply to those regions that do not have plans in place.

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9 Two members believe that the only areas that should be regulated are stock exclusion and preventing excessive nitrogen losses, as the other suggested activities would in effect be covered by these two areas and would be redundant.

10 Two members are concerned at the level of prescription involved in regulating this set of practices, and the consequences involved in broadly regulating a set of activities, which in some cases will have little effect on water quality. They favour focusing on activities that involve inappropriate land use close to waterways. They believe that the only areas that should be regulated are stock exclusion and preventing excessive Nitrogen losses, as the other suggested activities would in effect be covered by these two areas and would be redundant. One member is concerned at the use of blunt national instruments for problems that need to be resolved on a catchment by catchment basis.

c) **Land use change (intensification)** – changes in land use and intensification can result in large increases of contaminant discharge into freshwater. To avoid this, land use change and intensification need to be restricted.

There are two views as to how this should be done:

i **Option 1** – Taking the precautionary approach, and in order to avoid grandparenting high contaminant loads from current intensive systems and penalising extensive farmers, there should be a moratorium on changes of land use that increase risks to freshwater quality. (Some examples include any land use change to dairy or dairy support, from large scale plantation forestry to any intensive pastoral use, from non-irrigated pastoral to irrigated pastoral use, and from any land use to vegetable growing.) However, provision will need to be made for normal vegetable crop rotation policies and movements of cropped areas within catchments.

ii **Option 2** – Change of land use should be allowed under a non-complying activity consent if land users can demonstrate that there will no additional negative impact on freshwater quality consistent with the NPS-FM. Deforestation to extensive pastoral land use should be permitted.

The group has different views as to whether these approaches should be applied nationally or only to over-allocated or 'at risk' catchments.

d) **Stock exclusion** – An important way to limit the effect of livestock on waterbodies is by fencing them off and suitably planting between the grazed area and the water's edge. While the work of many farmers and the dairy industry under the Clean Streams Accord (and the other programmes that followed) is acknowledged, there are problems that are best fixed by national regulation:

- under the Clean Streams Accord, the practice has generally only been applied when water bodies are next to in-milk dairy stock
- at times riparian planting has not been done and fences are too close to water to be effective
- the Clean Streams Accord definition of a waterway – more than a metre wide, a 'red-band' deep – is not adequate to deliver the Essential Freshwater objectives. There is strong evidence that the waterbodies that do not meet this definition carry the lion's share of the contaminant burden into New Zealand's waterways.

Regulation requiring stock exclusion is essential. There are some key areas on which further urgent work will be needed for the detail of the policy. These are:

- the intensity of stocking rates required before cattle and deer are excluded from waterways so that ecosystem health is protected must be soundly based
- riparian setbacks are an important part of the policy. The setback distance or methodology used to arrive at a distance must be soundly based. Riparian planting should also be integrated into New Zealand's carbon balance, and farmers should be entitled to access the carbon benefits from riparian plantings (although these may not be significant).

The FLG agrees that:

- there should be a trigger that ensures that there are stringent rules for more intensive farms
- less intensive farms should use a risk-based framework that could be managed by way of a Land and Environment Plan.
- where an area is temporarily intensive there should be a riparian buffer (although it does not need to be planted).

Some of the FLG believe that there should be no grandparenting of non-complying fencing and regions, and other landowners should not be exempt from requirements to exclude stock from waterways. Some others are concerned that early adopters, who have fenced and planted in good faith but at less than the required distance, will be penalised. This will run the risk of the policy being denigrated by those that would otherwise support it. They wish to see an appropriate transition regime.

e) **Wetlands** – Protecting wetlands is vital. Even since the RMA (which was intended to protect wetlands) was passed, New Zealand's wetland losses have been significant. There must be a complete halt to the further loss of wetlands due to land use change and neglect. Wetland policy should also address recognition of management practices to offset the otherwise inevitable effects of plant succession on wetland biodiversity loss.

At-risk catchments

55. Developing and implementing a stronger regulatory framework will take time. In the interim, some catchments could be irreversibly damaged, so we see an urgent need to identify and take action in at-risk catchments (ARCs).

56. We are confident that a sound methodology has been developed by the Ministry for the Environment to help arrive at a set of catchments for which intervention can be considered.

57. Importantly, we want to see a clear strategy for determining which catchments to take action on, and what action might be taken in what circumstances. Without such a strategy and supporting implementation, the ARCs programme will not prevent at-risk catchments around the country passing ecological tipping points, or provide the level of intervention required across the catchments identified as "at risk".

58. We are also concerned that there are some waterbodies of extremely high significance that could be lost if strategy and speed of intervention is not enough (eg, Te Waikoropupu Springs).

59. We recommend that the Government should provide resources to:

- complete, as quickly as possible, a ranking of all ARCs
- identify a first set of all priority catchments that are at most risk of irretrievable damage in the short to medium term

- set out a timeframe for addressing those priority catchments and the set of tools that can be used
- identify interim measures and/or more rapid interventions (such as regulatory interventions and use of ministerial powers) so at-risk catchments do not pass tipping points while more intensive, long-term strategies are being developed
- develop a strategy for intervention in these catchments
- organise this programme of work to complement rather than compete with workstreams required to address the national issues.

60. We have also discussed in this context the role of exemplar, flagship projects – focused on a group of catchments – that demonstrate how national and regional government, business, and communities can work together to improve freshwater quality. These projects can make meaningful contributions in catchments with water quality issues, but they are not a substitute for targeting those catchments at immediate risk.

Land and Environment Plans (LEPs)

61. Well-constructed LEPs are a useful tool for farmers to manage their activities according to limits set by regional plans and to help farmers plan for improvement. An effective LEP should be part of an overarching farm plan that considers all elements of the farming enterprise when guiding management decisions.

62. LEPs are based on a robust stock-take of the farm's natural resources and their opportunities and limitations. They provide the platform by which farmers have the necessary knowledge to (where needed), change their land uses (including by diversifying) or farm systems. They can maximise the opportunities provided by their natural resources such as climate, soils, typology, biodiversity, and freshwater, while sustainably managing their vulnerabilities.

63. Most of the FLG hold the view that the regulatory regime for the implementation of rules and policies must not be delivered via farm environment plans. Some members support LEPs being mandatory and at least used in part as a regulatory tool.

64. A regulatory focus on LEPs, ahead of setting catchment limits and allocation mechanisms being established (for example by 2025), risks individual enterprises making poor decisions. An example is investing in standoff areas and effluent storage on a dairy farm which may be a poor use of capital within a severely over-allocated catchment that will require land use change.

65. We favour naming these Land and Environment Plans, rather than Farm Environment Plans. Farm environment plans have been evolving to be a compliance 'tick sheet' or support tool for regulation which does not adequately represent the range of natural resources, or the natural capital of the land in informing land uses and practices. We agree that:
    - there is a lack of evidence that farm environment plans **on their own** deliver environmental improvements

- LEPs/farm environment plans should not be used as a way to discourage regulation
- if required by regulation, there should be a clear signal that the LEP of the future is part of the regulatory framework (but not a replacement for a consent) and is required to help farmers meet the new expectations for freshwater.

66. Compliance is an important aspect of this risk-based approach. Only those activities covered in LEPs that are required by regulation or by regional plans should be audited to avoid unnecessary compliance cost, or land users taking a minimalist approach in their environmental planning.

Central and regional governance of freshwater

67. The FLG has significant concerns about the **governance** of water management. **At a central government level**, the FLG believes that there is a need for a new central agency, a freshwater commission, that can drive implementation and accountability.

68. Consideration of this role should also take into account any institutional changes arising out of the Three Waters review, and the advice of Kahui Wai Māori.

Roles of the new central government agency

- Provide stewardship of the overall freshwater management system, including relevant national direction instruments.
- Maintain and report on outcomes and indicators.
- Evaluate and report to the Minister for the Environment on the performance of regional councils in undertaking their roles.
- Identify and take action to respond to any capacity and capability gaps within the system.
- Be responsible for developing and maintaining any relevant national standards to be used in Land Environment Plans.
- Be responsible for the plans and investment for key decision support and measurement tools (such as OVERSEER).
- Develop and maintain freshwater-related competency requirements for farm advisers.
- Provide advice and assistance to regional councils during the planning process, and as they implement the new plans after 2025.
- Take compliance action where appropriate (while regional councils retain responsibility for the majority of compliance activity).
- Advise on and potentially fund research needs across the freshwater system.
- Coordinate and deliver promotional and information services.
- Coordinate central government financial assistance and facilitation.

- Work with regional councils, sectors and communities on coordinating national initiatives (for example, standard elements of models, learning from experiences in other catchments).

69. In addition, the Minister for the Environment should make **greater use of existing powers** to compel faster change by regional councils that might be 'dragging the chain', and to intervene when they are not doing their job properly. Pending the establishment of the proposed commission, the Ministry for the Environment should make greater use of litigation to compel change.

70. There are also **governance issues in regional councils**. Many elected councillors lack the ability to act as governors (instead acting solely as representatives) and have proven slow to act while water quality has declined. Their understanding of what is required by the RMA and the NPS-FM needs enhancing. Some councils' capacity and capability (science, planning, implementation, monitoring, and compliance) needs lifting. There are several options for improving this including:
    - improved legislation and training
    - using some appointed members to fill skill gaps and help lead governance behaviours on councils
    - an enhanced 'whistle-blowing' mechanism so that central government knows about poor behaviour earlier
    - a government 'witness' or 'adviser' to regional councils
    - support from the proposed freshwater commission.

Knowledge and models

71. The current and future regulatory framework **places a large reliance on the use of OVERSEER**. It is not currently in the position to play this role. For OVERSEER to play a key role, some outstanding issues need to be addressed:
    - the ownership structure and governance of OVERSEER is no longer appropriate for the central role envisaged for the tool in the future. The Government needs to own it
    - there is insufficient resource being applied to improve it (although some new funding in Budget 2019 will help)
    - data availability from OVERSEER needs to improve. Data needs to be transparent, as do the algorithms and any changes as they occur
    - OVERSEER is not an appropriate tool for a number of sectors (for example horticulture, and the arable sector). Other tools will be needed for them.

72. Similarly, better water management and an allocation framework for nutrients will require a **greater understanding of the way that different land types attenuate the discharge of nutrients** into waterbodies. The need to understand attenuation, while important, should not be used as a reason to delay changes needed to better support ecosystem and human health.

73. As a broader list of discharges to freshwater are considered, new tools will be required to manage land practice change and allocation (eg, sediment runoff from farming, forestry, and urban development). Developing these tools is urgent and will require significant investment.

Principles for allocation

74. As regional plans take effect, the level of over allocation in many catchments will be quantified, and new systems for allocation, and often reallocation, will be necessary.

75. We have developed some key principles to help guide future allocation policy, covering Nitrogen, other discharges, and for the allocation of water takes from catchments (water quantity).

76. Our principles are:

    i. The water comes first. Ensuring that waterbodies are treated in such a way as to maintain ecosystem health must be the first priority of an allocation system. Providing for essential human needs and sanitation must come second.

    ii. Water and waterbodies cannot be considered separately from the catchments they are part of. The land, land use within the catchment, the ecosystem services provided, the takes of water, and the activities that lead to discharges into water, must be considered and planned for in an integrated way. All of these interactions must be considered as part of the waterbody itself.

    iii. The current way of allocating rights to discharge and take water is no longer useful. Grandparenting current rights, either as a proxy for fair allocation, or for transitioning over-allocated catchments to a future where water quality is protected and restored, is not supported.[11]

    iv. Water is a communal resource and systems of allocation must recognise and reflect this. It is recognised that legal or implicit rights (eg, the right to discharge contaminants, the right to take and use water) will naturally take on some of the features of 'property rights' and will at times confer value to businesses over time. However, allocation systems should not shelter businesses from the need to protect natural resources that are sensitive, variable, and interconnected, nor the costs of mitigating environmental consequences of activities.

[11] Two members of the Group support grandparenting for the allocation of water, and one supports it for the allocation of discharges.

v. Businesses and firms do need certainty so that they can invest and develop their potential use of the communally owned resource. A fair allocation system also needs to recognise this.

vi. In the future, after the needs of the waterbody and essential human needs have been protected, allocation systems should be based on the inherent natural capital of the land and waterbodies . This is the best allocation approach because it recognises the natural interactions between the land, the use of the land, and the waterbodies within each catchment or sub-catchment. There is a significant amount of work needed on the detail of this, and there are significant transitional issues.

vii. An allocation system must be dynamic, and able to account for changes over time in climate, water availability, and economic changes. The system must allow rights to take water or to discharge to move over time to the best land use (accounting for the needs of the water itself, human needs and economic needs – both for rural land use and for industry).

viii. Any allocation system must ensure that New Zealand maintains the ability to freely manage and regulate its water resources, including over its ability to regulate without interference from any international trade rules or obligations. This is especially important in a world where climate change will see many countries confronting serious water shortage issues causing them to look for water elsewhere.

Implementation

77. The changes proposed by this framework are significant. They will test the **capability and capacity** of many of the institutions operating in the freshwater space – central and local government, sector groups, iwi, science and social science groups, planners, and individual farmers. We would expect a review of capacity and capability, and for any gaps to be filled.

78. This report goes into detail on the regulatory changes that will be needed. We also know that this regulation will need to be supported by a wide variety of **complementary steps** that will need to be taken by central government, councils, sector groups and land users, iwi, scientists, and others. These include developing LEPs and compliance systems, leveraging the capacity of industry groups, capability sharing, learning from overseas and using new technology, using social science to help with behaviour change, and developing new extension systems.

79. We think that **a quantitative assessment of potential impacts of the package** is essential. This is in terms of the expected effect on freshwater quality, ecosystem health and human health; and the possible land use, social, investment and production changes, and distributional effects there might be.

80. Having an understanding of impacts is important for several reasons, including helping guide implementation of the package. For example, the restrictions on the discharge of N in this package will have immediate consequences for land users in several catchments. It will be important to have a clear communications strategy for addressing land users' concerns, and a way of helping land users to understand their options for changing their practices.

81. Analysis of effects must recognise that the impact of these changes will affect some businesses, communities and families more than others. Consideration needs to be given to supporting the industries and communities where greatest change will be required.

82. While regulation might drive the change, communities working together will affect the change, and much remains to be learnt about how this might be best supported.

Appendix 1: Members of the Freshwater Leaders Group

John Penno (Chair)

Professor Nicola Shadbolt

Alison Dewes

Tom Lambie

Traci Houpapa

Dr Marc Schallenberg

Allen Lim

Marnie Prickett

Gary Taylor

Dr Hugh Logan

Mandy Bell

Corina Jordan

Bryce Johnson

Graeme Gleeson

Stephanie Howard