30 October 2019

Freshwater submissions
Ministry for the Environment
PO Box 10362
Wellington 6143

consultation.freshwater@mfe.govt.nz

Dear Sir or Madam,

Submission: Essential Freshwater - Action for healthy waterways

Thank you for the opportunity to provide comment on the Essential Freshwater Package (2019), which includes:

1. Action for Healthy Waterways: Discussion Document on National Direction for Freshwater;
2. Draft National Policy Statement for Freshwater Management;
3. Draft National Environmental Standards for Freshwater
4. Proposed National Environmental Standards for Freshwater; and
5. Draft Stock Exclusion Section 360 Regulations

PGG Wrightson Seeds’ submission on this package is attached. While we support the goal of improving New Zealand’s freshwater quality, the outcomes will require substantial adaptation to the design and operation of New Zealand’s farming systems.

We are concerned that the discussion document makes light of how challenging these adaptations will be, fails to adequately acknowledge remediation advances underway, and has not sought to understand the resulting implications or to fully work through the intended and unintended consequences of these proposals.

Achieving these adaptations in a manner that is sustainable for both the environment and rural communities will require innovations in the management, production and marketing of our agricultural products.

As a developer and supplier of forage products, PGG Wrightson Seeds has expertise in bringing new forage products to market and supporting the associated on-farm adaption. We are familiar with the challenges of developing and implementing new technology and believe that aspects of the proposed package will have the unintended consequence of hindering rather than enhancing the innovations needed to help achieve these targets.

We recognise that the agricultural sector will be required to make significant changes to support the target of improved water quality. For these changes to occur in a positive manner, a high level of buy-in to the package is needed from the sector and that requires a broader and more informed conversation about the detail behind the targets and their impacts.

Yours faithfully,

Chief Executive Officer - Oceania
PGG Wrightson Seeds
Introduction

PGG Wrightson Seeds is the largest seed wholesaler in New Zealand. We supply forage seeds for farmers to grow pastures, cereal and maize crops, summer forage crops and winter grazing crops. We have an estimated domestic market share of approximately 65% and export seed crops globally. We are a wholly owned subsidiary of DLF Seeds of Denmark, a co-operatively owned Seed producer operating around the world.

In New Zealand we employ approximately 350 staff and invest $10-15 million annually on Research and Development (R&D). Our R&D programme aims to develop superior pastures, forage crops and crops destined for human consumption which, among other things, provide New Zealand farmers with; improved productivity, more sustainable farm systems and enhanced environmental performance.

New Zealand’s primary industry generates annual export earnings of more than $45 billion and pastures and forage crops underpin much of this production.

PGG Wrightson Seeds supports the main objectives of the Essential Freshwater package 2019 to stop degradation and improve New Zealand’s freshwater resources, but we have four key concerns:

1. There is no wholistic analysis across the entire package which considers in totality the improvements in water quality, the impact on farm businesses, rural communities and rural agribusinesses, the full extent of changes on-farm needed to achieve the targets and the economic impact of these.
2. Many aspects of the package are prescriptive in nature, seeking to regulate practices and behaviours rather than outcomes. Limited autonomy is offered to individual farm businesses and catchments to develop options for individualised solutions to mitigate against nutrient losses. There is potential for this approach to hinder the innovation, development, and investment in and adoption of the new approaches and technologies needed to achieve the improvements sought.
3. In some regions, nutrient losses on-farm will need to be significantly reduced from current levels. We support the use of Overseer™ as the model for estimating the effects of on-farm practices. However, a substantial increase in resourcing will be needed to ensure that Overseer™ does not also become an impediment to on-farm innovation, and this increase may exceed the additional funding provided in Budget 2019 for Overseer™. Further, the timeline for incorporating enhanced functionality and new technologies into Overseer™ may fail to match milestones for improved bottom-line targets for nutrients outlined in this discussion document.
4. We understand that there are a range of concerns around some of the targets (specifically nitrogen, phosphorus and sediment) for ecosystem health and questions around the process and science used to set these targets. The detail of this area is outside our expertise but, given the potential impact of these targets, we believe it is critical that these targets are set in a way that all parties can agree is fair and rigorous and based on sound science and process.

Lack of Wholistic Analysis

While the Essential Freshwater Package has used several external reference and advisory groups to inform detail of the policy proposals, the outcomes of these groups do not appear to have been brought together in a wholistic manner. Specifically:

1. The package lists unresolved issues which were tabled by the advisory groups with an apparent absence of subsequent analysis presented to try and resolve these differences.
2. The package is silent on the on-farm, social and financial impacts of achieving the intended targets.
3. Our understanding is that even in their natural state, some waterways exceed the bottom-line targets proposed, yet the package makes no acknowledgment of this nor does it outline how such inconsistencies are to be resolved. This in turn raises questions as to how the bottom-line targets were set and gives rise to concerns that these targets may have been set in an overly theoretical way and not sufficiently validated with real data, and that they have been set at a national level without enough consideration of local factors.

Given the potential magnitude of change that this package may require at farm, catchment and national levels, we believe recommendations contained within the package should be supported by robust analysis to facilitate the building of a broad consensus on the setting of the targets and a common understanding of the impact of achieving these targets on the agricultural sector, rural communities and the broader economy.

Supporting Innovation
We understand that smaller, low-land streams across many regions of New Zealand will not be able to achieve these bottom-line nutrient targets without significant adaptation on-farm. This requires significant investment in the development of new technologies and in the adoption of these new technologies on-farm.

Investing in the innovation required to deliver these technologies and adaptations requires confidence that, if successful, the innovations will be able to be adopted at a scale and in a manner that justifies the risk of that investment.

We have several comments in this regard:

1. If farmers are not provided with robust analysis demonstrating how they can achieve the improvements required in a practical and cost-effective manner, uncertainty in the sector will decrease confidence and undermine the ability to fund the investments needed (both on and off-farm) to achieve the targets.

2. Some mechanisms being proposed (such as around the consenting framework and limitation on grazing of winter crops) are input-based rather than effects/output-based methodologies. Such approaches tend to be rigid and can have the impact of stifling innovation as new ideas are, by definition, not provided for in the existing approval processes. Therefore, alternative approval processes must be created through which new approaches can be assessed and ratified. To avoid added uncertainty, these processes must have a known and predictable methodology.

3. The timeframes outlined in the package are at odds with timelines required for development of new agronomic technologies. Plant breeding is typically a 15-year process and can take much longer when entirely new technologies are to be developed. Consequently, while we do have some products at various stages in the development pipeline which will assist with mitigation of nitrogen and phosphorus losses to water, it could take more than 20 years before entirely new products are readily available in the market.

4. Research and trial work seeking to help reduce the impact of farming on the environment will itself be captured by consenting rules. It is important that such rules have the flexibility to consider the potential benefits of such activities to avoid restricting the very work designed to help develop solutions.

5. Farming is subject to climatic and season variability, and any limit setting process needs to have the flexibility to recognise that, unlike industrial process which can be fully controlled, it is not fully possible to control all parameters within farming. That said, we strongly support the development of pasture and winter crop stewardship methodologies that provide for extreme weather events.
Winter crop grazing is a cornerstone of stock management in colder regions of New Zealand, providing an economically cost-effective source of winter feed, preventing damage to pastures on fragile soil types and providing stock with an energy dense, high quality feed. We are a significant supplier of seed for winter forage crops and have considerable intellectual property, expertise and knowledge of winter forage grazing.

Our specific comments regarding winter crop grazing are:

1. We believe that there remains a tenable future for winter crop grazing in New Zealand, but that this requires adoption of effective winter crop stewardship, mitigation of nutrient losses and attainment of appropriate standards of animal welfare. Alternatives to winter crop grazing include overwintering on pasture, feed barns and winter standoff pads; each of which bring not inconsiderable economic, logistical and animal welfare challenges to farming businesses. Overwintering of stock on pasture is not an acceptable practice for many colder regions of New Zealand, with risks of pasture and soil degradation, loss of nutrients and heightened risk to animal well-being through underfeeding.

2. A regional / catchment-based approach should be employed for management of winter grazing rather than a broad-based, national approach. The heterogeneity of farm systems nationally dictates that individual farms and catchments should be afforded autonomy as to methodology of mitigation against nutrient loss. Prescriptive, specific mitigation strategies legislated at a national level will not be equally relevant to all farms or to all catchments. Winter crop management practices must be targeted for an individual farm or regionalised catchment to account for local soil types, conditions, stock classes and farm systems. If nutrient losses, as modelled by Overseer™ meet nationally legislated targets, how these targets are reached should be permitted to vary based on the particular farm systems.

3. Effective regulation around the grazing of winter crops should be effects-based. This would allow mitigation strategies that reduce loss of nitrogen and phosphorus to water to be tailored to localised regions. Ongoing support for and empowerment of regionally directed and governed strategies for winter crop management will permit the evolution and implementation of specific, effective, timebound and sustainable winter crop stewardship practices that meet nationally legislated bottom-line nutrient limits.

4. Winter crop grazing requires management of a broad range of factors which include environmental (measures of land use suitability and the impact on that land of normal and extreme weather events), agronomic (crop rotation and disease risk), animal welfare and biosecurity consideration. We support the development of wholistic strategies and legislation that meet bottom-line targets for water quality but recommend that the requirements and wellbeing of grazing stock and sustainable agronomic principles of forage crops and pastures be considered and incorporated within each future farm system.

5. Restrictions on land which may be used for winter crop grazing must consider individual farm factors are well as broader regional factors. Particularly in regions where animals are moved off-farm for winter grazing; overly tight restrictions applied at an individual farm level may cause a wholesale redistribution of winter grazing across the region which may have a range of unintended consequences and not necessarily create better water quality outcomes.

6. We do not believe that simple restriction of area permitted to be winter cropped considered in isolation from other wholistic mitigation strategies is an appropriate way forward. Restrictions on area of land used for winter crop grazing (as a maximum hectare area or percentage area) for a farm business will likely create indirect, unwanted consequences. For example, farming to a specified upper limit of land area for cropping, will drive the use of higher yielding crops on lesser areas of land resulting in higher stocking density (animals per hectare) with increased risks of breaching the welfare code for grazing stock (such as area allocated per animal and the freedom of grazing animals to express normal behaviour). Higher stocking densities will further increase the risk of soil compaction and degradation and, during severe weather events, heighten the risks of loss of sediment, faecal contamination and phosphorus.
7. We strongly believe that positive tangible steps towards enhanced water quality are already demonstrably underway in some (but not all) localised catchments and regions. Evolution of sustainable winter crop stewardship and management practices of crops and grazing stock are well underway in many winter crop regions. Industry levy-funded organisations, Beef + Lamb and DairyNZ, are working closely with regional councils and industry partners (including PGG Wrightson Seeds) to support best practice winter crop planning and management strategies that deliver on water quality and animal welfare requirements. We believe that more time is required for the benefits to be demonstrated from recently implemented concepts and policies around improved land use, winter crop grazing strategies and animal wellbeing.

We are also a large purchaser of seed and grain from arable farms. Existing issues with farm level rules which impede innovation within arable farming will continue to do so under this new package. The challenges for arable farmers are related to the implementation of environmental planning at a farm level that is based on an annual cycle. While such rules are applicable for livestock farming they can be challenging for arable production where:

1. Crop rotation cycles can be for periods of up to 10 years. These long cycles are required to ensure purity of seed production and avoid contamination from prior crops.
2. Due to these long rotations and the discrete nature of arable farming, arable farmers frequently use a combination of both their own land and leased blocks. Lease land brings a range of additional issues including; consent costs must be amortised over the period of the lease (which may be short), nutrient allocations are typically attached to land titles and are not readily managed with leases and historical farming data can be less readily available or not available at the required level of detail.
3. While nutrient applications on arable farms are designed to meet crop demand, unexpected weather events mean it is not possible to manage the process with absolute precision. Consequently, the process for setting bottom-line limits needs to take a statistical approach and consider both average and peak limits to allow a more robust, effects-based approach to be adopted.

Support for Overseer™
We support the use in Overseer™ as a way of modelling the effects of farm practice (rather than having input-based policy) and recognise that the Government has budgeted additional funding for the development of Overseer™. However, we are concerned that this will not be enough and that Overseer™ will become a bottle-neck to the adoption of new technologies and methods and that this in turn may slow or discourage innovation. Specifically:

1. In some areas the bottom-line targets are likely to require nutrient losses on-farm to reduce by an order of magnitude (i.e. potentially 80-90%) below current levels. This will require Overseer™ to be an order of magnitude more precise than it is currently. We are concerned that an order of magnitude improvement will require Overseer™ to become vastly more complex than it is today – one-off events which may have a less than 5% impact and may currently be modelled imprecisely would end up having a 25-50% impact in a system where all other losses has been reduced by 80-90%.
2. In addition to the costs of making these improvements, we are concerned that the detailed science and additional resources needed to make these changes will take some years to implement and will not be available within the timeframes for which improvements in bottom line targets are expected.
3. As part of innovation, we expect to see farmers experimenting with new pastures and crops and with new methods of managing those forages. However, the models underpinning Overseer™ need to be supported by good science or good empirical evidence to ensure their accuracy and credibility. By definition, this information does not fully exist for new crops or the new grazing or conservation methods of new farming systems. This creates a potential impasse and some mechanism will be required which allows such experimentation to occur prior to its inclusion on Overseer™ so that the impacts, both commercial and environmental, can be fully assessed and the body of knowledge created to support its eventual inclusion in Overseer™.

4. Once new innovations are developed and the science to show their impact on nutrient losses becomes available, mechanisms to rapidly incorporate these into Overseer™ will be required. Due to the seasonal nature of agriculture, innovations can take a long time to develop (many processes can only occur once per year) and it is important that Overseer™ is well enough resourced that it can quickly incorporate new technologies and not itself be the cause of further delays to the innovation process. We are aware of existing technologies for which good evidence has been developed over the last 3-5 years which still do not have a firm date for when they might be included in Overseer™.

Conclusion
We support the goal of improving New Zealand’s freshwater quality, but the proposed package will have significant impacts on farm business, rural communities, rural agribusinesses and the broader New Zealand economy. New innovations in technology and approach will help to minimise the negative impacts but these will take time to develop, test and implement.

Given the magnitude of change these proposals will drive it is important that we move forward with a high-level of buy-in from the agricultural sector.

We are concerned that the current package of proposals will not achieve the buy-in needed and includes aspects which will stymie innovation and cause unintended consequences that will make the bottom-line targets harder to achieve.

Ultimately, we believe a broader and more informed conversation about the science and process underpinning the targets, the changes and impacts they will have on the sector and the best way to achieve these desired outcomes is needed and we would welcome being an ongoing part of such a conversation.