

PROPOSED NATIONAL POLICY STATEMENT ON FRESHWATER MANAGEMENT 2009

SUBMISSION TO: Board of Inquiry – Proposed National Policy Statement on Freshwater Management c/- Ministry for the Environment

SUBMISSION ON: Proposed National Policy Statement on Freshwater Management 2009

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1.1 Horticulture New Zealand was established on 1 December 2005, combining the New Zealand Vegetable and Potato Growers' and New Zealand Fruitgrowers' and New Zealand Berryfruit Growers Federations, and now also includes Olives New Zealand.

1.2 On behalf of its 7,000 active grower members Horticulture New Zealand takes a detailed involvement in resource management planning processes as part of its National Environmental Policy. Horticulture New Zealand works to raise growers' awareness of the RMA to ensure effective grower involvement under the Act, whether in the planning process or through resource consent applications. The principles that Horticulture New Zealand considers in assessing the implementation of the Resource Management Act 1991 (RMA) include:

- The effects based purpose of the Resource Management Act,
- Non-regulatory methods should be employed by councils;
- Regulation should impact fairly on the whole community, make sense in practice, and be developed in full consultation with those affected by it;
- Early consultation of land users in plan preparation;
- Ensuring that RMA plans work in the growers interests both in an environmental and "right to farm" sense.

2. The specific submissions and decisions sought Horticulture NZ are detailed in the attached schedules.

3. Horticulture New Zealand wishes to be heard in support of this submission.

Thank you for the opportunity to submit on the Proposed National Policy Statement on Freshwater Management.



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23 January 2009

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SCHEDULE ONE – Background

1. Horticulture NZ's involvement in water management issues

- 1.1 Water is fundamental to the horticultural sector and the production of food, both in terms of quality and quantity.

Horticulture NZ is actively involved in the development of government RMA policy and RMA Plan processes throughout New Zealand and recognises the far reaching impact that the Proposed National Policy Statement on Freshwater Management (Proposed NPS) could have.

In particular, Horticulture NZ has been actively involved in regional planning processes to ensure that the water requirements of the horticultural sector are recognised in regional plans across the country, so is aware of the range of planning approaches used by Regional Councils for water management.

Horticulture NZ has a well developed industry quality assurance programme, NZGAP, which provides a structure to implement voluntary targets for environmental management in the horticultural sector, including those related to water management. Details of this programme are included in the submission and further information on the approach is provided in Appendix 1 to this submission. The approach is being developed in conjunction with a number of regional councils who support the concept of industry audited self management.

In addition, Horticulture NZ has been involved at all levels of the Sustainable Water Programme of Action, the government's programme to address the management of freshwater resources and has made submissions on the NES for Water Measuring Devices and the NES for Ecological Flows.

- 1.2 Horticulture NZ's involvement in water related issues is based on the Fresh Water Policy developed by the organisation in 2007. This policy provides the context for the following submissions on the Proposed NPS for Freshwater Management.

Horticulture NZ Fresh Water Policy: 31 October 2007

1. Horticultural production in all regions of New Zealand is reliant on reliable supplies of fresh water that are suitable for sustained crop production and post harvest washing and processing. Water is essential for the production of food.
2. Horticulture NZ's position is that:
 - A sufficient quantity of fresh water is a key driver that will ensure the horticulture industry can continue to operate, expand and prosper.
 - Reliability of supply of water in terms of volume, quality and timing is critical for growers and their production.
 - Water is a resource that needs to be managed on a catchment basis, with minimal transfer occurring within a catchment, and controlled from within each region.
 - Augmentation of supply from storage needs to be encouraged, supported by the community, and be a priority in at risk catchments.
 - Consents to take water belong with the land for which they are issued.
 - Consents to take water should not be able to be owned by third parties.

- The trading of consents to take water should not occur.
- The transfer of water allocated by a consent should be limited to within a catchment and to land owners and productive uses.

3. Horticulture NZ acknowledges that:
 - Water is a public resource that must be protected, and its allocation and quality managed at an appropriate level for the catchment or location.
 - The instream and cultural values of water need to be recognised.
 - There are many competing users of water; e.g. domestic, livestock, recreation, industry, energy, environmental, cultural as well as its use for crop irrigation and post harvest washing and processing.
4. Horticulture NZ supports appropriate regional planning mechanisms for managing the allocation and efficient use of water (including its measurement) in situations where:
 - It is necessary to manage the resource efficiently and sustainably, based on robust scientific measurement. Consenting authorities must use best practice based on good science when formulating catchment and aquifer allocation.
 - The measurement, data collection and reporting requirements are relevant, practical, achievable and necessary.
 - Recognition is given to the need to minimise risk through the allocation mechanism.
 - Regulatory costs are minimised.

1.3 As part of involvement in the Sustainable Water Programme of Action, Horticulture NZ has been a member of the Primary Sector Reference Group for the Water Programme of Action. This group recently released commitments from the various sectors for targets in respect of water management. As part of this, Horticulture New Zealand has undertaken the following:

1. Achieve the objectives of the MAF SFF/Horticulture & Arable Industries/Regional Government Project: Nitrogen Managers for Environmental Accountability (NMEA) by January 2009, followed by:
 - End-2009 Horticulture Industry product group recognition of nutrient budgeting for all high risk activities; i.e. leaching from certain crops on different soil types; e.g. potatoes, onions, sweetcorn, winter grown green vegetables and some berryfruit and fruit; e.g. kiwifruit
 - February 2009 - NMEA developed 'Overseer (Hort)', based on HortResearch's SPASMO and Crop & Food's Soil and Plant Growth Models (ex LUCI), completed and rolled out
 - 2009 onwards – advocate with regional councils for the voluntary uptake of Overseer (Hort) by growers to be recognised in land and water plans, through permitted activity rules for fertiliser application via nutrient budgeting
 - March 2009 - Commence 6 months extension work with Overseer (Hort)
 - Late 2009 – Overseer (Hort) incorporated into New Zealand GAP (Good Agricultural Practice) -including the GLOBALGAP equivalent levels
 - April 2010 - 25%¹ uptake of Overseer (Hort) by vegetable and relevant fruit growers by, April 2012 - 50% uptake and April 2014 - 75% uptake
 - 2017 - Overseer (Hort) fully developed, 90% taken up by industry.

¹ 25% of the growers should cover approximately 80% of the land under horticultural production.

2. Develop Crop Production tools, for high-risk activities, optimising efficient use of nutrients and water inputs under continuing development, including:
 - Potato Crop Calculator operational 2007
 - Rolled out for limited commercial use late 2007, roll out continued through 2008
 - End of 2009/10 season - 25% uptake by growers, end 2012 - 60% uptake and end 2013 - 75% uptake
 - 2015 - Potato Crop Calculator fully developed, 90% taken up by industry
3. Continue extension work on irrigation efficiency including irrigation distribution performance and advocating soil moisture monitoring and best management practices for irrigation management (INZ Code of Practice linkage).
4. Continue to promote the uptake of the GROWSAFE[®] Calculator (used to predict the environmental fate of agrichemicals used on crops across the country, by combinations of crop, region (climate), soil type, and agrichemical) to all affiliated product groups and growers.

2. Development of this submission

As part of developing response to the Proposed NPS for Freshwater Management Horticulture NZ has consulted with growers in most horticultural regions throughout 2008. This has been done in conjunction with policy interventions on regional plans and district plans.

Discussions have also been conducted with other primary sector organisations, industry groups, iwi groups and environmental NGO's in a range of formal and informal processes including the Primary Sector Water Partnership, The Sustainable Land Use Forum, and the current initiative being undertaken by The New Zealand Business Council for Sustainable Development.

Horticulture New Zealand also made comments on the development of the National Policy Statement in early 2008 through submissions by the Primary Sector Water Partnership and Horticulture NZ, and took the opportunity to provide views when the Ministry for the Environment sought them for consideration as part of the requirements under section 42 of the Resource Management Act 1991.

Horticulture NZ notes that views have evolved in the organisation, as a more sophisticated understanding of fresh water management issues has developed over time.

SCHEDULE TWO – Submissions on Proposed NPS for Freshwater Management

1. General Submissions

Horticulture NZ generally **supports** development of a National Policy Statement for the management of freshwater. However the current proposal is unacceptable. It has been difficult to comment on the Proposed NPS in full due to the number of problems that have been identified with the policy for the horticultural sector. Horticulture NZ is particularly concerned that the Proposed NPS lacks sufficient detail of key terms used to enable a clear and certain response to be made in terms of the impact and effect of the proposed statement. These terms are subject to specific submission below. Horticulture NZ has persisted in making the submission link to the Proposed NPS to be as helpful as possible to the Board of Inquiry in deliberations.

The Horticulture NZ submission is linked to Horticulture NZ submissions on the Proposed National Environmental Standard (NES) for Ecological Flows and Water Levels and on the Proposed NES for the Measurement of Water Takes.

Decision sought:

That The Board of Inquiry provide the opportunity to make further submissions on all submissions received to establish common ground and identify the potential areas where further consultation is required.

Changes are made to the current proposed NPS following hearings and further submissions, and that a new proposed NPS is re notified as a result of the consideration of all submissions for a single further round of public consultation and public hearings. Horticulture NZ notes this would be unusual, but given the far reaching consequences of the proposed NPS it is necessary to get it right.

Horticulture NZ seeks that the Board of Inquiry recognise Horticulture NZ as an interested party and provides the opportunity for Horticulture NZ to be involved in the process at all steps.

2. Section 32 analysis

2.1 Horticulture NZ considers the Section 32 Report does not provide adequate in depth analysis of the potential costs and benefits. Nor does it assess as alternatives an appropriate mix of the policy options and tools that may provide an alternative to the current Proposed NPS.

The method of determining the values provided is open to question because of the lack of detail and clarity provided in the Section 32 Report. Particularly:

- It is assumed that a cost to one sector can be offset by benefits to another sector, and that the only cost or benefit that needs to be considered is the net efficiency gain or loss. This assumes that all costs and benefits are equally transferrable.
- It does not account for the costs to be incurred by private individuals and representatives of organisations in the many plan change processes that will be required to implement the Proposed NPS.

- It assumes that none of the plan change processes would have an appeal stage.
 - There is inadequate linkage to show how the policies are the best alternative to achieving the objectives of the Proposed NPS.
- 2.2 Therefore Horticulture NZ contends that a more robust Section 32 analysis should be undertaken to determine the full benefits and costs of the proposed policy approach.
- 2.3 Additionally, the Section 32 analysis does not assess the alternatives appropriately. Horticulture NZ considers an appropriate assessment should also include:
- A mix of the policy options considered; including a mix of economic instruments, audited self management, national environmental standards, amendments to the RMA, Ministerial call in (for major projects) and production of best practice guidance.
 - An alternative NPS, for example the more directive approach suggested in the submission from Local Government New Zealand (LGNZ) on this Proposed NPS.
- 2.4 The Section 32 Analysis does not consider the effect on costs and benefits of this Proposed NPS in combination with other proposed national policy streams, such as the Proposed NPS on renewables, climate change policy initiatives, the proposed development of an NPS to manage the risk from natural flooding hazards and the Proposed NZ Coastal Policy Statement (PNZCPS).
- 2.5 The Section 32 analysis does not consider the effect on costs and benefits of this Proposed NPS in combination with other proposed or existing National Environmental Standards (NES), such as the NES for Sources of Drinking Water and the Proposed NES's addressing ecological flows and water levels, and measurement of water takes.
- 2.6 The Proposed NPS directs councils to initiate and implement objectives, policies, rules and new conditions on resource consents in a manner that precludes Section 32 analysis from being conducted in any meaningful context.

Decision Sought:

Given the wide ranging implications this Proposed NPS will have on the New Zealand economy, a further Section 32 analysis should be conducted to determine the full benefits and costs of the proposed policy approach; considering the points outlined in paragraphs 2.1 – 2.6 above.

3. Process and the current political context

- 3.1 The current process for developing this Proposed NPS has been interrupted by some key policy developments and political changes. In particular, three key events that could have significant implications for freshwater management have occurred:
- A review of the Resource Management Act is currently being undertaken. While the review is currently focused on process issues, these process issues have significant implications for the management of freshwater in New Zealand. Key process issues that may be under review include the extent of consultation that may be required, the powers of regional councils, and the relationship between regional and local authorities.

- Decisions are still being made on the Proposed NZ Coastal Policy Statement (NZCPS). Elements of the proposed NZCPS seek to influence the way fresh water is managed and includes defining the coastal environment. The scope and jurisdictional influence of the NZCPS has yet to be determined and there is a potential for legal and regulatory conflict between the two instruments.
- Collaborative governance models have been proposed that are designed to influence the development of freshwater policy in New Zealand. The Government has indicated support for collaborative governance models such as the recently initiated Sustainable Land Use Forum (SLUF). However little assurance has been provided on the role such processes should play in freshwater policy development.

Decision Sought:

Horticulture NZ seeks that the Board of Inquiry:

- Delay consideration of this Proposed NPS on Freshwater Management until the review of the RMA has been finalised and clarity has been obtained about the relationship between this proposed NPS and the NZCPS.
- Clarify the potential role collaborative governance models will play in the development of national policy on freshwater management.
- Ensure that Horticulture NZ is included in any collaborative governance approach that is recommended by the Board of Inquiry.

4. Preamble

4.1 While the preamble is considered to have little regulatory influence, Horticulture NZ considers this an appropriate place to highlight some of the benefits of rural activities as opposed to more broad "economic" considerations mentioned in the preamble. The primary sector is one of the largest sectors in the New Zealand economy.

For example in 2004, "the agriculture and forestry sectors produced 64 percent of New Zealand's total merchandise exports and 46 percent of New Zealand's total foreign exchange earnings (June year, 2004). Of the remaining merchandise exports, around 15 percent are manufactured goods. Of this 15 percent it is estimated that around half are directly or indirectly related to the agricultural and forestry industries. Examples include exports of meat processing machinery, electric fences, animal identification equipment and horticultural sorting and grading equipment."²

4.2 The agricultural and forestry sectors make a significant contribution to the economic and social development of New Zealand. The Section 32 analysis states that irrigated land uses 77% of the extracted water nationwide and attributes the majority of freshwater quality decline to the primary sector. Considering the important role the primary sector has in the management of freshwater and the contributions the primary sector makes to the New Zealand economy, the primary sector's role should be recognised in the preamble.

² MAF website Link: <http://www.maf.govt.nz/mafnet/rural-nz/statistics-and-forecasts/sonzaf/2004/2004-sonzaf-04.htm>

Decision Sought:

Rewrite the preamble to reference the contribution of agriculture to the NZ economy and the significant role that the primary sector has in the management of freshwater

5. Purpose

5.1 Horticulture New Zealand considers that the purpose of the Proposed NPS should also provide linkage to other central government policy programmes, in particular:

- Development of the NPS on Renewable Energy
- Development of Climate Change Policy
- Development of the NZCPS
- Development of National Policy on Management of Flooding and Natural hazards.

5.2 The above policy streams will have a key influence on the management of freshwater. Horticulture New Zealand supports the goal of stating interrelated and integrated objectives and policies as to the management of freshwater resources. Horticulture NZ considers the only way the Proposed NPS will achieve this is by incorporating influential policy elements from the above policy streams.

Decision Sought:

Incorporate key elements of the above policy streams into the proposed NPS, with consequential amendments to objectives and policies **OR** clearly delineate the jurisdictional influence of the policy streams to avoid regulatory overlap or unintended regulatory consequences.

6. Objectives

6.1 Objective 1 is supported in full by Horticulture NZ.

Decision Sought:

Retain Objective 1

6.2 The intent of Objective 2 is supported by Horticulture NZ. However, it is considered unhelpful to limit the implementation options for infrastructure to “supply, storage and distribution of fresh water”. Such options preclude support for the development of other methods, such as aquifer recharge from surface water bodies, or options that have not yet emerged. Horticulture NZ would support use of the term “Water Resource Development” to holistically cover all options.

6.2.1 It is considered that Objective 2 does not adequately incentivise the provision of adequate water resource development to sustainably meet the needs of future and present generations. As an example, climate change policy and science has indicated future scarcity of freshwater resource is likely to increase. There are few options to mitigate against future water scarcity that do not involve some form of water harvesting and usually water storage infrastructure is required to enable this. Provision for water resource development is not just beneficial for agricultural intensification. Water resource development can also provide benefits for sustaining environmental flows and generating renewable energy.

Decision Sought:

Amend Objective 2 to read *“To ensure effective integrated management of fresh water resource development by providing for the co-ordination and sequencing of land-use development with investment in infrastructure, ensuring land-use development has no net negative effect on the quality and available quantity of fresh water.”*

6.3 Objective 3 is supported in full by Horticulture NZ.

Decision Sought:

Retain Objective 3 as stated.

6.4 Horticulture NZ supports the intent of Objectives 4 and 5, but considers:

- The objective does not provide enough flexibility to be able to manage fresh water at the catchment scale.
- Objectives 4 and 5 should be integrated.

6.4.1 Effective water resource development often requires the ability to offset or mitigate environmental effects with a positive benefit elsewhere. Horticulture NZ considers the ability to offset or mitigate an environmental effect should be limited to within the catchment or receiving environment of the freshwater resource.

6.4.2 Horticulture NZ seeks that the Proposed NPS provide for water resource development that has no net degradation of the water resource, including the ability to provide ecosystem services and offset freshwater degradation. Objectives for land use development should be integrated within the objectives for water quality and ecological values / life supporting capacity.

Decision Sought

Replace Objectives 4 and 5 with the following new Objective 4:

“Ensure the net life supporting capacity and ecological values of freshwater resources are recognised. Avoid net degradation of freshwater resources by protecting freshwater resources from inappropriate –

- a) Taking, use, damming or diverting of fresh water; and*
- b) Land-use Development; and*
- c) Discharges of contaminants.”*

6.5 Objective 6 contains the key components for demand management. Horticulture NZ seeks that the objective is amended to:

- Provide more certainty that fresh water policy will be developed in a manner that encourages the development of fresh water resources where the effects can be avoided, remedied or mitigated / offset.
- Recognise the need for sustainable development of freshwater resources to encourage economic productivity and generation of wealth.

Most of the objectives within the Proposed NPS focus on controlling the undesirable effects of fresh water resource use. While these are laudable principles, it is also crucial to recognise and provide for the ability of people to generate wealth from those resources to foster sustainable community development.

- 6.5.1 Objective 6 should also provide some certainty of tenure for existing users. Currently the development of efficient infrastructure for irrigation is hindered by a lack of certainty for growers about how long they will have access to water resources. Terms for resource consent range across the country from 35 years to 1 year. Horticulture NZ seeks that Objective 6 guide policy to encourage the granting of longer term consents to encourage and enable the maintenance and installation of efficient irrigation infrastructure.

Decision Sought:

Amend Objective 6 to read

“To ensure that freshwater resources are maintained or enhanced to provide for demands (including social, economic and cultural demands) in a manner that ensures:

- a) Equitable access to the available supply of water for allocation:*
- b) The need to provide for resilience against the biophysical and economic effects of climate change (through planning provision for fresh water resource development):*
- c) A nationally consistent approach to the tenure for water permits.*
- d) The management of adverse effects that arise from those demands.”*

- 6.6 Horticulture NZ agrees with the principle of Objective 7. However, the objective is too vague to provide meaningful guidance on what is meant by use of the term efficiency. Horticulture NZ favours a definition closely linked to the concept of *dynamic efficiency*; incorporating concepts of technical efficiency, economic efficiency, allocative efficiency, consumer efficiency and intergenerational equity. An appropriate definition of dynamic efficiency should include discussion on the appropriate levels of reliability for supply of fresh water in allocation regimes.

- 6.6.1 Horticulture NZ has found no relevant definitions for dynamic efficiency that apply to the water management framework in New Zealand and seeks that the Board of Inquiry determine an appropriate definition of efficiency that can apply to freshwater management in New Zealand. The determination of an appropriate policy on efficiency should have particular regard to the need to provide for the equitable sharing of water available for allocation in a manner that does not pick winners.

Decision Sought:

That the Board of Inquiry commission expert opinion to provide recommendations for a definition of ‘dynamic efficiency’ that can be incorporated into the Proposed NPS.

That Objective 7 is amended *“To ensure that fresh water is allocated in terms of dynamic efficiency.”*

- 6.7 Horticulture NZ recognises Objective 9 is proposed as a means to standardise the reporting of freshwater management requirements as required by Section 35 of the RMA 1991. Horticulture NZ is concerned that the costs of reporting information fall where the benefits lie. There is wide variance in the treatment of costs for environmental reporting among regional councils. Some of the benefits lie at the regional and national level. Some of the benefits accrue to the user of the resource. Horticulture NZ seeks that the Board of Inquiry determine an appropriate method to allocate the costs of effective monitoring and reporting depending on where the benefits lie.

Decision Sought:

That Objective 9 be supported by appropriate policy that guides the allocation of costs to where the benefits lie for the matters reported.

7. Policies

- 7.1 Policy 1 generally contains timeframes that are unrealistic for implementation of the proposed actions by local and regional government. Horticulture NZ is aligned with the comments in the LGNZ submission on the Proposed NPS in relation to this, particularly the comment made on page 42 in paragraphs 15.1 – 3. Horticulture NZ supports the introduction of new policy through a cascading hierarchy of reviews from the Regional Policy Statements down, and expects that this could be achieved within the next statutory review period, as outlined in the LGNZ submission.
- 7.1.1 The view of Horticulture NZ with respect to Subsection a) of Policy 1 is expressed partly in the submission on the Proposed NES for Ecological Flows and Water levels. Horticulture NZ does not support the setting of a default regime for environmental flows at the national level. Horticulture NZ seeks the Proposed NPS include a requirement for regional councils to set defaults that are appropriate to the regional context.
- 7.1.2 Subsection b) of Policy 1 is not supported by Horticulture NZ. It is inappropriate for the regions to be tasked with identifying notable values, without guidance from central government on:
- A process for how notable values are to be identified and applied to waterbodies
 - A standard national description of the range of notable values, and the attributes that make the values “notable”.
- 7.1.3 It is recommended that the Board of Inquiry request that work be undertaken to establish these notable values and the process for attributing them to waterbodies. The policy as currently worded is likely to encourage costly and unhelpful variance across the country as to how notable values are described and attributed.
- 7.1.4 Use of the term “degraded freshwater resource” is not supported due to the image this presents for primary industries that may be reliant on water from those resources for the purpose of food production. Horticulture NZ understands the need to identify “at risk” catchments and proposes this is better as a descriptor for the catchments that may require targeted policy intervention to ensure that the values of the waterbody important to communities are maintained or enhanced. Horticulture NZ also seeks consequential amendments be made to other policies that use the terminology in the cascading series of linked actions set out in the Proposed NPS.
- 7.1.5 Policy 1 Subsection c) is supported by Horticulture NZ with the following exceptions:
- The concept of “restoration” is problematic without a reference level of restoration that is to be achieved. In other words, at what stage is a notable value considered to be restored? Horticulture NZ suggests that the restoration concept be removed from the Proposed NPS, unless it can be quantified or measured against a specified benchmark or standard and made available for public submission.

- Fresh water quality standards may differ from region to region, but the process for setting standards should not vary, and the methods for monitoring and measuring water quality standards should be prescriptive and identified at the national level.
- Use of the term “degraded”.

7.1.6 Policy 1 Subsection g) describes, with no certainty, a process for regional policy statements to guide and direct regional plans to restrict existing takes, uses, damming and diversion of freshwater for a range of reasons. The effect of the clause is uncertain because a range of matters to be sustained are referred to. It is also by no means clear that the words “in times of low flow” apply to the whole clause. The way the Proposed NPS is worded the clause effectively delivers a mechanism for ‘clawback’ that is unrestrained due to the uncertainty inherent in the definitions of the matters referred to in the clause. The RMA is designed to provide a high level of protection to consent holders. Horticulture NZ contends this clause goes against the purpose of the RMA in removing the protection provided. Horticulture NZ opposes the clause in its entirety and seeks deletion of Policy 1 g).

7.1.7 Policy 1 subsection h) is opposed. It directs regional and district plans to control land use development and discharges of “contaminants”. This is not an effects based approach. The clause effectively requires management of all discharges and land use, in order to manage the land uses and discharges that may have an adverse effect. Many that do not will be captured by the requirement for such rules. It is also uneconomic to manage all adverse effects. The practical reality is that many activities have adverse effects. Some adverse effects are necessary to maintain the social and economic wellbeing of present and future generations. It is also not clear how “land use development” will be interpreted. The definition provided in the proposed NPS refers both to land use intensification and land use change, as well as subdivision. Both land use intensification and land use change are poorly defined in NZ resource management policy. It could be expected that regional and district plans will “effectively manage” discharges of contaminants by requiring consent for any land use change (be it from one crop to another) regardless of the effect it has. For this reason Horticulture NZ opposes Policy 1 subsection h) and requests it is deleted in its entirety.

7.1.8 Policy 1 subsection i) is unclear and is not supported because:

- It is almost impossible to predict the demands that may arise from future land use development.
- It is unclear what demands for fresh water are envisaged as a result of the discharge of contaminants.
- It appears to allow for water to remain unused and allocated to “reasonably foreseeable” future use, increasing competition for water available to current generations. This is particularly unnecessary with respect to surface water, as water allocated and used now does not affect the availability of water use in the future.

7.1.8 a Horticulture NZ does support the encouragement of transfer mechanisms but notes the most efficient transfer mechanisms may lie outside the RMA 1991. Horticulture NZ recommends that the Proposed NPS provide direction to regional planning documents encouraging the establishment of water user groups in water short catchments, to maximize allocative efficiency. The establishment of water user groups in water short

catchments (in conjunction with implementation of the NES for Measurement of Water Takes) has the potential to maximize the benefits from water available for allocation.

- 7.1.8 b Horticulture NZ does not support priority being granted automatically to “reasonably foreseeable domestic water supply” in the absence of clear guidance on what is considered to be an appropriate or reasonable domestic water use allowance per head of population. The inclusion of “appropriate demand management strategies” is of no assistance without regulatory guidance on what is to be considered appropriate. It is recommended that the Proposed NPS also provide guidance on priority for domestic consumption outside the region of supply. For example Horticulture NZ has concerns about competing priorities for water in the Franklin region where priority is being provided to drinking water for Auckland over the demand for water from existing consents for irrigation in the Waikato region. Horticulture NZ considers that priority to access the water should be provided to existing or future demand within users within the source catchment or region.
- 7.1.8c Horticulture NZ does support the inclusion of policy increasing the resilience to the effects of climate change.
- 7.1.9 Policy 1 subsection j) (i) is supported with the proviso that the amendments sought in 6.2 above are consequentially applied here. Policy 1 subsection j) (ii) is not supported by Horticulture NZ, as the policy only relates to control of adverse effects and not the encouragement of beneficial effects of land use development.

Decision Sought:

Conduct a wide scale rewrite of Policy 1, taking account of the matters addressed in Section 7.1 of this submission above.

- 7.2 Policy 2 also has unrealistic timeframes set and Horticulture NZ supports the relief sought in the LGNZ submission, for the reasons outlined on page 53 of the LGNZ submission to the proposed NPS in paragraphs 19.3 and 19.4.
- 7.2.1 Policy 2 subsection c) (i) is partially supported by Horticulture NZ, with the proviso that the relief sought regarding efficiency definitions (paras 6.6 and 6.6.1 above) is granted. It is also difficult to understand why the use of industry good practice and technology is seen as a “minimum”. This encourages regional authorities to set unreasonable and unrealistic standards that can not be achieved without widespread economic loss that has not been accounted for in the section 32 analysis for this proposed NPS. Nor does the direction in the Proposed NPS provide the opportunity to analyse alternatives and conduct meaningful Section 32 analysis on the policies to be introduced to give effect to the Proposed NPS.
- 7.2.2a Policy 2 subsection c) (ii) is seeking policy that puts conditions in new consents governing the “use” of water as well as the “take” of water. Horticulture NZ does not support this as the only mechanism to control the use of water. Use conditions in resource consents compromise the ability of a grower operation to take advantage of land leasing or sharing arrangements. While many growers own land they also lease considerable areas so that they can achieve suitable rotations for their particular crops. There is also an emerging trend amongst some growers to swap or share land for crop rotation purposes. Rotation is critical to the sustainability of horticulture, for reasons

like maintenance of good soil health and to suppress soil borne diseases. This means that the areas being cropped can vary considerably between seasons and 'sue' of water restrictions could significantly limit such sustainable practices.

- 7.2.2b The horticultural industry is taking active steps to ensure that best management practices are known and adopted by growers. Horticulture NZ also seeks to ensure that growers can adopt NZGAP as a holistic regulatory system. Growers are already meeting the requirements of NZGAP – the Fresh Produce Approved Supplier Programme which growers need to be able to supply supermarkets and export markets. Compliance with NZS 8409:2004 Management of Agrichemicals, the Fertiliser Code of Practice and Spreadmark are part of the NZGAP requirements.
- 7.2.2c Any status other than permitted activity status presents many problems for growers that have shared or lease land arrangements. Land use consents go with the title of the property and are the responsibility of the landowner, not the grower. This creates social and contractual issues that may result in a dramatic decrease or halt to lease and shared land arrangement which provide for more sustainable cropping rotations, as described in paragraph 7.2.2a above.
- 7.2.2d Horticulture NZ has been actively working with regional councils to establish permitted activity rules that incorporate audited self management to manage land use effects. Horticulture NZ seeks flexibility within the proposed NPS to locate land use controls in such permitted activity rules.
- 7.2.3 Policy 2 subsection c) (iii) is conditionally supported on the proviso that the relief sought in paragraph 7.2.1 above is granted.
- 7.2.4 Policy 2 subsection c) (iv) is conditionally supported provided the relief sought in Section 6.7 above is granted and consequential amendments are adopted for this policy.

Decision Sought:

Substantively amend Policy 2 taking account of the matters addressed in section 7.2 of this submission above.

- 7.3 Policy 3 requires territorial authorities to undertake a range of functions that have traditionally fallen into the jurisdiction of regional authorities. Horticulture NZ supports and advocates for the integration, not just of regional council and territorial authority functions, but also administrations. However, in the current context the proposed NPS is likely to confuse jurisdictional boundaries. It is preferred that regional councils control land use impacts on water quality, not both regional and territorial authorities. Horticulture NZ seeks guidance in the Proposed NPS on the jurisdictional roles of regional and local authorities, and seeks that the Proposed NPS directs guidance to be inserted into Regional Policy Statements on the jurisdictional boundaries with respect to freshwater management.

Decision Sought:

Delete Policy 3. Replace Policy 3 with some national direction on the relative jurisdictions of council in respect to freshwater management.

- 7.4 Policy 4 is supported by Horticulture NZ, with a caveat that the relief sought in paragraph 7.1.2 above regarding notable values is granted. Horticulture NZ supports the conduct of due diligence on all of the values referred to when regional authorities are to prepare variations to the Regional Policy Statements to implement this Proposed NPS. However Horticulture NZ recognises that there is a need to resource councils to conduct this analysis. Support will need to be provided from central government to enable a thorough analysis of the matters to be considered.

Decision Sought:

Retain Policy 4 subject to relief granted for matters sought in 7.1.2 above.

- 7.5 Policy 5 is not supported by Horticulture NZ as it stands. Policy 5 links directly to Policy 3. Horticulture NZ's position aligns with LGNZ submissions on defining the relevant jurisdictions of regional and territorial authorities, as described in Section 7.3 above.

Decision Sought:

Retain Policy 5 with clauses c) to e), delete clauses a) and b).

- 7.6 Policy 6 is not supported by Horticulture NZ. It is considered vague and confusing given the guidance in Policies 1 to 3. It is considered superfluous because the proposed NPS should provide enough guidance on designations through the objectives and policies 1 and 2. The rule is structured in the manner of a "catch all" rule to cover matters not addressed by other parts of the proposed NPS. It is confusing because there is uncertainty around how widely the policy will apply. It is vague due to the inclusion of "unless inappropriate" in the first sentence. It is also vague because no guidance is provided about the consents it would apply to.

Decision Sought:

Delete Policy 6

- 7.7 Policy 7 is not supported by Horticulture New Zealand. It is not considered transparent or equitable. The policy has the potential to provide carte blanche to councils looking to manage the costs of water resource management by using section 150 of the Local Government Act as opposed to the more rigorous cost recovery policies outlined in the Resource Management Act 1991 (including sections 35 and 36). A policy regarding non – regulatory methods should not be one sided in the methods described. The only non regulatory methods included in the policy relate to financial and development contributions.

- 7.7.1 There is considerable variance in the cost recovery models for the management of freshwater between regional councils, and few challenges have been mounted to the options for cost recovery chosen by differing regional authorities. There is also discussion on this in paragraph 6.7 above relating to Objective 9 of the Proposed NPS. Policy on cost recovery is often buried in local government planning tools such as the Annual Plan and the Long Term Council Community Plans (LTCCP). Few organisations have the resources to be able to adequately assess the planning framework to this level, particularly when there is significant work to be undertaken at the regional and territorial plan level across the country.

- 7.7.2 Councils and industry have sought guidance from central government before on what constitutes fair and equitable treatment of cost recovery for freshwater management. Central government has remained silent on the issue. Horticulture NZ seeks guidance on what is considered to be a fair and equitable split between local, regional and national benefit derived from the matters costs are recovered for. It is expected that this will result in resource users incurring an equitable and transparent share of the costs attributable to their benefit, as will other parts of the community and crown agencies.
- 7.7.3 Cost recovery policy can not be managed effectively at other legislative levels. General changes to cost recovery policy could have unintended consequences on resource use areas other than fresh water. The Proposed NPS provides the appropriate mechanism to limit these unintended consequences on other resource use areas.
- 7.7.4 Nor does Horticulture NZ believe that it is within the scope of the Proposed NPS to refer to regulations other than the RMA 1991. That is; the effect of any NPS should be jurisdictionally bound by the “parent” legislation.
- 7.7.5 A policy on non regulatory methods is sought by Horticulture NZ, but the policy should not just promote vehicles for recovering costs. This submission refers to NZGAP in Section 7.2.2 b above. Further explanation of the Horticulture NZ position regarding non regulatory methods has been added as Appendix 1 to this submission. Appendix 1 should be read in conjunction with our submission on proposed Policy 7.

Decision Sought:

Provide guidance within the Proposed NPS on the appropriate split of costs and benefits in respect to cost recovery for fresh water management, and delete references to the Local Government Act in the Proposed NPS.

Develop a new policy (linked to an appropriate objective) on non regulatory methods that takes account of the material provided in this submission, including the material provided in Appendix 1.

- 7.8 Policy 8 is supported by Horticulture NZ.

Decision Sought:

Retain Policy 8.

- 7.9 Policy 9 is supported by Horticulture NZ.

Decision Sought:

Retain Policy 9

8.0 Definitions

8.1. Consumptive Use

The “Consumptive Use” definition is supported as a first step, however definitions of consumptive use are problematic. Most activities are never fully consumptive. Water use for renewable energy generation is also considered preferentially under Environment Waikato’s Variation 6 because it is defined in the section 32 report as a

non consumptive use. A hydroelectric power station can store the water, effectively denying access to irrigators during summer. Horticulture New Zealand would argue that this delay, for all intense purposes represents a consumptive use and the current definition in the proposed NPS would support that (temporal delay). There is a delay before the resource is returned to the system and made available for reuse. It is the delay in water returning to the system; that is a key element defining water taken for the purpose of irrigation as a fully consumptive use.

Horticulture NZ also contends that water taken for the purpose of irrigation is being unfairly treated as 100% consumptive. No allowance is made for the quantity of irrigation water taken, that returns to the system. This is despite the findings of a report prepared for Environment Waikato in 1997 showing that irrigation water use will return between 40 and 60% of that abstracted to the river system over time.

Decision Sought:

Retain the definition of consumptive use as defined in the proposed NPS. While the definition is not ideal it represents the most equitable management solution for a definition of consumptive use.

8.2 Degraded Freshwater resource

A definition for “degraded freshwater resource” is not supported by Horticulture NZ for the reasons outlined in 7.1.4 and 7.1.5 above. Horticulture NZ recommends the definitions section refer to a definition of “at risk” catchments to replace the terminology used, and that consequential amendments be made through the Proposed NPS wherever the term “degraded water resource” is applied.

Decision sought:

The definition of “degraded freshwater resource” is amended as follows: *“At risk freshwater resources: means those Freshwater Resources of a region whose Notable Values have been degraded by Land-use Development, discharges of contaminants and/or the taking, use, damming or diverting of fresh water as to require that priority be given to improve fresh water management to meet the purpose of the Act and this National Policy Statement.”*

8.3 Freshwater Quality Standard

The definition for “fresh water quality standard” is short on detail and will not promote national consistency in the management, measurement and reporting of objectives for Fresh water management. Horticulture NZ has already made comment on this in paragraph 7.1.5 above. A rule is not the only appropriate place that fresh water quality standards can be made and the definition should be revised to include a more holistic definition of what a fresh water quality standard is.

Decision Sought:

The Proposed NPS provide national direction on the setting of fresh water quality standards and the measurement and monitoring of water quality standards.

8.4 Land Use Development

The definition for ‘land use development’ is opposed for the reasons outlined in paragraph 7.1.7 above. More thought need to be given to a definition of land use development. The wide use of the term in the Proposed NPS makes this a vital term to

define with some rigour at the national level.

Decision Sought:

Delete the current definition of land use development.

Commission an expert panel including industry, council, iwi, environmental and recreational groups to examine the scope and context of the use of the term “land use development” within the Proposed NPS.

Provide a new definition and context for use that is dependent on the outcomes of deliberations by the expert panel assembled for the task outline immediately above.

- 8.5 The definition of ‘notable values’ is not supported. The reasons for this are outlined in paragraphs 7.1.2 and 7.1.3 above. In addition the values described in the proposed definition exclude any values for economic purpose. Examples include the importance of Lake Tekapo for power generation, or the importance of the Rangitata River and associated irrigation infrastructure for primary production, or the importance of the Shotover River for tourism values.

Decision Sought:

Delete the current definition of notable values.

Commission an expert panel including industry, council, iwi, environmental and recreational groups to examine the scope and context of the use of the term “notable values” within the proposed NPS.

Provide a new definition and context for use that is dependent on the outcomes of deliberations by the expert panel assembled for the task outline immediately above.

- 8.6. Reasonable domestic take
Horticulture NZ seeks a new definition for “reasonable domestic take”. The definition should set a threshold for domestic takes during times of water restriction, and should support the relief sought in relation to paragraph 7.1.8 b) above. It should also align with policy in 6.6 and 6.6.1. A limit should only apply in times where there is a distinct water shortage. It is considered appropriate that during such times, when other takes have ceased, that domestic users are required to be circumspect with their water use. The report “Ageing pipes and murky waters” by the Parliamentary Commissioner for the Environment shows that in 1999 Christchurch’s average total water use was 800l/p/d in summer. This is clearly well in excess of the 250 l/p/d that are the basis of Ministry of Health figures. The same report shows that 180 l/p/d is achievable with good water management. We understand that work conducted by the NZ Water and Waste Association also supports 180 l/p/d. There is a necessity for all New Zealanders to take water efficiency seriously.

Therefore given the restraint that should be required when all other takes have ceased, it is appropriate there is a limit defined in the Proposed NPS for Reasonable Domestic Take. Horticulture NZ proposes that the figure provided by the Ministry of Health (250 litres per person per day) is appropriate.

Decision Sought:

Define “Reasonable Domestic Take” as 250 litres per person per day and link the definition to policies on demand management strategies, demand management and domestic water efficiency.

9.0 Structure

- 9.1 The Proposed NPS should clearly crosslink the purpose, objectives and policies to show the interrelationships between the purpose, objectives and policies. This is required to understand the logic of the policy development process. Similar techniques are commonplace in local government planning documents. Links are often used to define the relationship between objectives, policies and rules.

Decision Sought:

Provide cross referencing in the manner outlined on MfE’s Quality Planning website, linking objectives and policies.³

³ <http://www.qualityplanning.org.nz/plan-development/structure-organisation-plans.php#usability>

Appendix 1

Setting the structure to implement voluntary targets for environmental management in agriculture – Horticulture NZ draft discussion paper

Many countries are moving towards the adoption of voluntary standards and targets to achieve environmental outcomes as part of their ongoing sustainable business practice. Flexibility in meeting objectives, and a stable investment context make these schemes attractive to business.⁴

New Zealand examples include The Packaging Accord 2002, The Cleaner Streams Accord. Partnerships between business sector interests and Regional Councils have seen some voluntary initiatives combined into local regulatory frameworks.⁵

More recently the horticulture (through NZGAP) and forestry sectors (Forestry Industry Code of Practice) have been working with regional councils (in particular Horizons Regional Council) to align their regulatory needs; by developing and incorporating audited self management systems within regional plans and policy statements.

Often the successes that have been identified in overseas schemes have been achieved by combining regulatory frameworks with business led voluntary initiatives. Partnership between business interests and regulators is a necessity. Overseas experience has found this particularly useful, where some business units within the sectors are not currently adopting; or are yet to form best practice initiatives.

In these cases regulatory tools can be a “backstop” to encourage adoption and to limit the number of businesses that are prepared to “freeride” on the positive activities of others. The objective is to limit the compliance burden to those not adopting recognised best practice. Examples of such arrangements include the environmental agreement / covenant model adopted in the Netherlands, and the Natural Resource Management Plans (NRM's) being adopted in the catchments of the Murray - Darling in Australia.⁶

Defining targets and standards

There are four types of targets which can be developed.⁷

Aspirational targets

Aspirational targets are about the desired condition of natural resources in the longer term (20 – 50+ years) and represent the national or regional vision / goals. These targets are used to guide national and regional planning.

Management action targets

⁴ <http://www.oecd.org/dataoecd/51/62/2958617.pdf>

⁵ For example the proposed One Plan (Horizons Regional Council) uses FSC Certification to grant permitted activity status to forestry as a land use class.

⁶ It needs to be noted that there is no overseas situation that mirrors the issues faced in New Zealand, either in terms of the importance of agriculture to the foreign exchange earnings of New Zealand, the systems of governance used here or the socio-economic conditions in New Zealand (and the reasons for them).

⁷ http://www.regionalnrm.qld.gov.au/policies_plans_legislation/planning_guidance_docs/tgt_setting_final.pdf

Management action targets relate to management actions or capacity building, which contribute to resource condition targets. These are short term achievements (1 – 5 years).

Resource condition targets

Resource condition targets are specific, time-bound and measurable, relating to the condition of natural resources in the medium term (10 – 20 years). Resource condition targets should emphasise practical constraints for targets given the social and economic context. Resource condition targets are most useful and practical when they are adopted from community participation processes that take account of local conditions.

Standards

Standards refer to a stated level of quality that is considered acceptable, usually by an established authority. Some resource management issues are subject to regional and local variations and guidelines are more appropriate than standards. *Guidelines* are statements offering advice on the implementation of policy or the preferred approach for implementation. For example, guidelines for developing water quality targets and resource planning guidelines.

Adopting and choosing targets.

At a regional scale, there is no one model or process that it used to validate progress against the targets set.

When setting national targets it is useful to think about some of the possible approaches that have been adopted. Figure 1 below presents an idea of how a framework could be established:

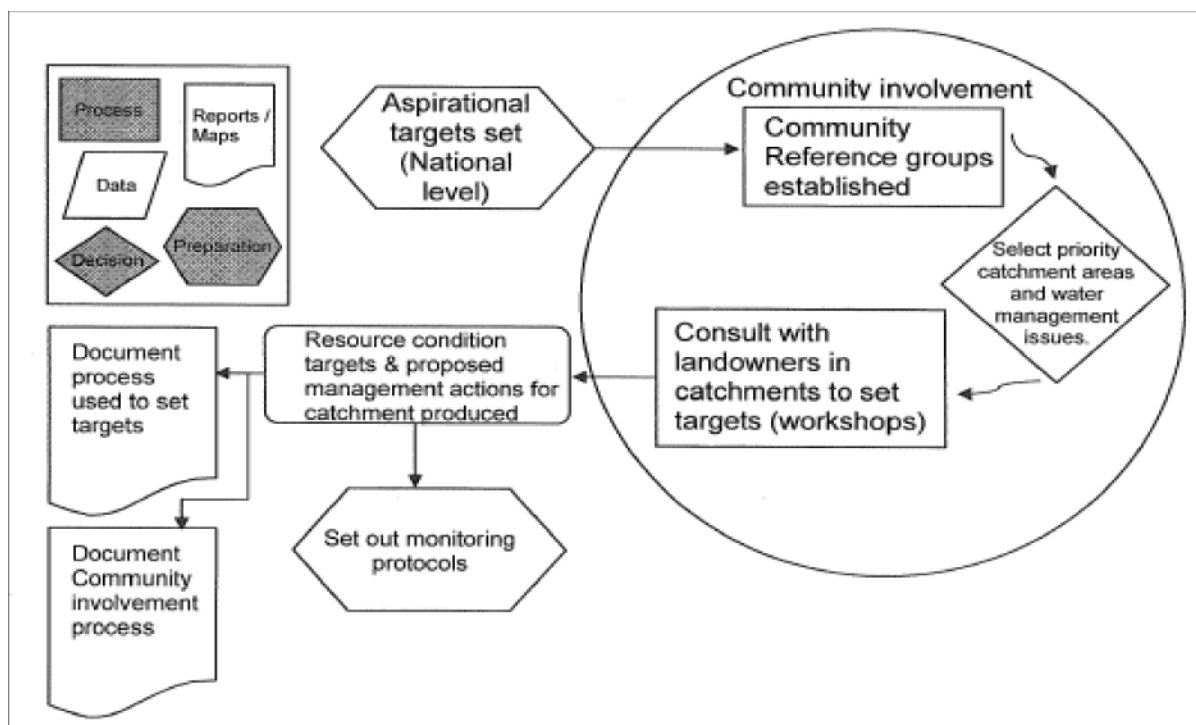


Fig 1 showing a model for involving community in the setting of targets that meet national objectives.⁸

⁸ Adopted from http://www.agric.wa.gov.au/pls/portal30/docs/folder/IKMP/LWE/SALIN/scase/tr308_shu.pdf

An alternative approach to gathering baseline information and targets is to: Standardise and subsidise a monitor farm programme that identifies best management practices for social, economic, environmental performance indicators; and monitor the results. Develop an appropriate benefit cost analysis of appropriate mix of technologies for adoption by representative farms in each of the monitor farm classes.⁹

Evaluation and monitoring of targets

Targets should be:

- Specific
- Measurable
- Achievable (realistic)
- Resourced
- Time-bound.¹⁰

'Measurability' is the most important consideration. It is important to know when objectives have been achieved (demonstrable by evidence). It is important to state how success will be recorded.

Some questions to ask:

- Who will do the work?
- Do those responsible have the appropriate training and tools to do the job?
- Where will the money coming from?
- Who has the responsibility for success or failure?

Specific: Objectives are specific enough if:

- Everyone involved knows that it includes them specifically;
- Everyone involved can understand it;
- Objectives are free from jargon;
- All the terms have been defined.¹¹

Benchmarking and indicators¹²

Benchmark information and indicators are how you measure progress against targets and objectives. Indicators should reflect the links between human activities and their environmental effects, as well as the effect of the responses of people to these impacts. Generally speaking there are four types of indicator:

- What is happening to the environment and to humans? (Descriptive Indicators).
- Does it matter? (Performance indicators)
- Are we improving? (Efficiency indicators)
- Are we on the whole better off? (Total Welfare indicators).

⁹ <http://www.govpe.ca/af/agweb/index.php3?number=72033#goals>

¹⁰ <http://www.thepracticeofleadership.net/2006/10/15/10-steps-to-setting-smart-objectives>

¹¹ www.renewal.net/Documents/RNET/Toolkit/Howusebaselines.DOC

¹² http://reports.eea.europa.eu/TEC25/en/tech_25_text.pdf

To be effective, indicators need to address social and economic efficiency as well as environmental effectiveness. In other words, indicators should measure the cost of efforts to achieve the target, as well as the effectiveness of the efforts.

Suggested steps to establish a successful voluntary target initiative:

- Identification of natural resource management and environmental challenges in terms of economic, social and environmental trends and consequences.
- Clear measurable objectives that include natural resource management and environmental conservation, repair and sustainable use where relevant.
- Clear outline of regional and catchment priorities and how those priorities were developed and how they will be updated to take account of new information.
- Quantitative targets and milestones (or intermediate outcomes) relevant to natural resource management and environmental conservation (for example per cent of catchment to be revegetated).
- Percentage and area of priority at risk areas to be protected through management agreements (or legal caveats).
- A core set of quantifiable performance indicators that are consistent across regions and programs to the maximum extent possible.
- A commitment to adequate resource levels for performance measurement and reporting against objectives and targets.
- Clear reporting obligations and timetables that require achievements, shortcomings, remaining challenges and the strategies addressing them to be specified.
- Length and percentage of catchments or regional waterways protected from stock damage or point source pollution.
- Number and percentage of catchments or regional waterways that meet quantifiable targets for water quality. It is important to note care is needed with this indicator as droughts and floods can radically change the data. An underlying trend is required that takes account of major one off events.
- Number and percentage of farms within a region or catchment using best practice sustainable farming methods with farm productivity or income above the national average.
- Level of awareness within a region or catchment of sustainable resource management best practices.

Examples of targets set overseas

Adopted from Murray Darling Agreed ICM Plan 2001 – 2010: targets for regional or national bodies.

- Reduce or slow the rate of increase in xxxx by xxxx date
- Produce a catchment strategy for in-stream nutrient management in xxxx catchments by xxxx date
- Reduce the occurrence / or agricultural contributions to algal blooms in xxxx (usually a defined coastal zone or inland waterbody) by xxxx date.

Adopted from Murray Darling Agreed ICM Plan 2001 – 2010: targets for Landholders and land managers:

- act to achieve agreed regional and national outcomes using a range of mechanisms, including:
 - seeking information and assistance to protect the natural resources within their care and those affected by their actions,
 - providing investment,

- planning and managing their properties in line with best management practice for their sub-catchment and industry, and
- consider changing their land use where necessary;
- generating and sharing knowledge;
- complying with regulations regarding the use of natural resources for their areas; and
- be involved in catchment planning.

Targets for non government organisations representing industry, adopted from Canada (Cowichan River model)¹³

- Establish regional water management forums by . . .
- Develop a strategy to involve community by xxxx date
- Work with councils to identify priority areas and water quality / quantity issues by region.
- Identify local and regional water issues by xxxx date
 - Review existing information in sensitive and at risk areas by xxxx date
 - XXX Public water forums by xxxx date.
- Responding to water issues
 - Prepare Water Issues and Water Facts report by xxxx date.
 - Develop local vision and goals by xxxx date.
 - Gather public input on vision and goals by xxxx date.
- Assign local targets and draft action plans by xxxx date.

Adopted from the Canadian Federal-Provincial-Territorial Framework Agreement On Agricultural And Agri-Food Policy For The Twenty-First Century.¹⁴

Descriptive indicators and baselines:

- Baseline: Area of farmland posing different levels of risk of contaminating water by nitrogen. Baselines for [YEAR] for [FARMLAND TYPE] expressed as per cent low risk, per cent at intermediate risk, per cent at high risk.
- Area of farmland at different levels of residual nitrogen (surplus N above crop requirements).¹⁵ Equivalent baselines for 1996 were 33 per cent of farmland with less than 20 kg N/ha, 51 per cent between 20 and 40 kg/ha, and 15 per cent in excess of in excess of 40 kg/ha.
- Additional indicators may be developed for the proportion of farmland posing a risk of contaminating water by nitrogen, phosphorous, pathogens and pesticides for all agricultural land.

Potential target for territorial authority:¹⁶

- Work with sectors to identify priority areas and water quality / quantity issues by region.
- Support voluntary industry initiatives with backstop regulation and align planning requirements with international and national market based programmes where applicable.

Targets adopted from the Australian sheep/wool industry strategy; some 'management action' and 'resource condition' targets.¹⁷

¹³ http://www.cvrld.bc.ca/water_cowichan/pdf/CBWMP_29Mar07.pdf

¹⁴ http://www.agr.gc.ca/cb/apf/index_e.php?section=info&group=accord&page=accord

¹⁵ Obviously based on a model such as Overseer.

¹⁶ Adopted from various overseas council and planning authority websites.

Actions to address contamination of streams by sediment and nutrients:

- Improve surface water management on farms through graded banks, or adopting no till agriculture where appropriate.
- Protect waterways with grass swards and revegetation. Avoid clearing vegetation from gullies, stream banks and erosion prone (eg. Steep) soils.
- Minimise or control the effects of gravel abstraction, dam construction, roads and mining.
- Identify the locations of major contributors to sedimentation.
- Ensure better compliance with regulations.
- Adopt best management practices in relation to pollution of waterways by agriculture.
- Decrease export of phosphorus and nitrogen particularly from bare soils or degraded pastures.
- Avoid inefficient use of fertilisers.

Streambank erosion

- Target bed and bank erosion where it is obvious. Implement a plan for rehabilitation works.
- Protect watercourses and regulate drainage infrastructure to minimise erosion.
- Prioritise areas of your operation for erosion protection and implement a plan to minimise erosion.

Wetlands

- Maintain current areas of biodiversity and wetlands.
- Assess the condition of wetlands and identify isolated wetlands of high value.
- Modify impeding structures to ensure floods reach important wetlands
- Minimise the off site effects on wetlands

Actions to improve management of flows:

- Identify required allocation for fish passage, floodplains, wetlands, and health of in-stream organisms
- Manage water extraction for irrigation to safeguard riverine ecosystems.
- Manage the control of peak water discharge from dams.

¹⁷ http://products.lwa.gov.au/downloads/publications_pdf/PX050952_appx_C.pdf