

Horizons One Plan Water Management Policy Analysis

Report presented by Edgar E. Sacayon

Master of Environmental Management
Massey University

March 2015

1 Introduction

The Manawatu Wanganui region has been recently placed on the spotlight. Some of the rivers and lakes of the region present the highest levels of nutrients in the country. The regional council also known as Horizons, has decided to prioritize two issues, water quality degradation and water quantity, from all other environmental problems, in the new policy. The present report, reviews the draft policy chapter on water management from the Horizons Manawatu Wanganui Regional Council's. This includes the policy statement and the regional plan required by New Zealand Resource Management Act (Ministry for the Environment, 2006).

It is important to note that New Zealand's 16 political regions were established in 1989 following an integrated resource management approach based on watersheds. Under this "catchment based system" each council is responsible for the management of their natural resources (McNeill, Cheyne, & Summers, 2013).

The complete environmental policy draft, also known as The One Plan, was made through the synthesis of six older resource management plans and was supported by scientific research and community consultation. Although the draft has been concluded, it is being reviewed for final approval. Once the plan is approved it will have effect over a period of 10 years (Manawatu-Wanganui Horizons Regional Council, 2014b).

The Manawatu Wanganui region is located in the middle part of the northern Island of New Zealand. It comprises 2,221,500 Ha of land with an estimated population of 220,00 inhabitants. Their main economic activity is dairy production, manufacturing

and farming. Consequently these activities are producing negative effects on water resources.

The policy draft, made to address these negative effects has both strengths and weaknesses. On one hand, it has appropriately used scientific information to support its policy and created a water catchment zoning system. On the other hand it relies on heavy command and control regulatory instruments, which in our opinion will not produce the anticipated environmental results. Therefore it is recommended that economic instruments like water usage charges, water rights, water markets and trading; should be implemented in combination with command and control regulations to achieve the policy objectives.

2 Discussion

2.1 Issues

The main economic activities of the Manawatu Wanganui region are manufacturing, dairy production and farming (MBIE, 2013). Regional statistics for gross domestic product evidence how the region is experiencing economic growth. (Figures 1,2). As a result increasing nutrients, bacteria and sediments are draining to rivers and lakes to the point that some of the rivers of the Manawatu Wanganui region are considered to have the highest nutrient concentrations in the country (MBIE, 2013).

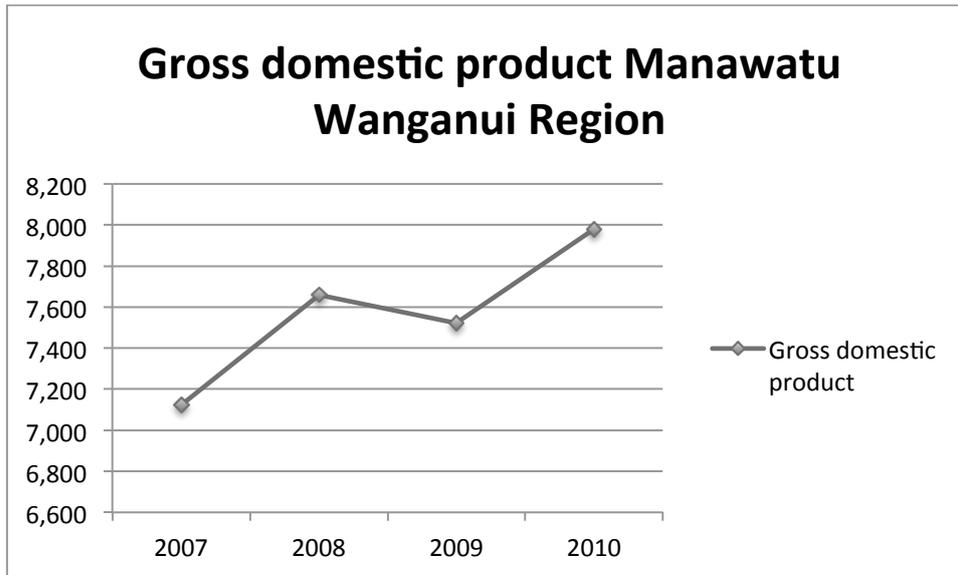


Figure 1. Manawatu Wanganui GDP. Source: Statistic New Zealand

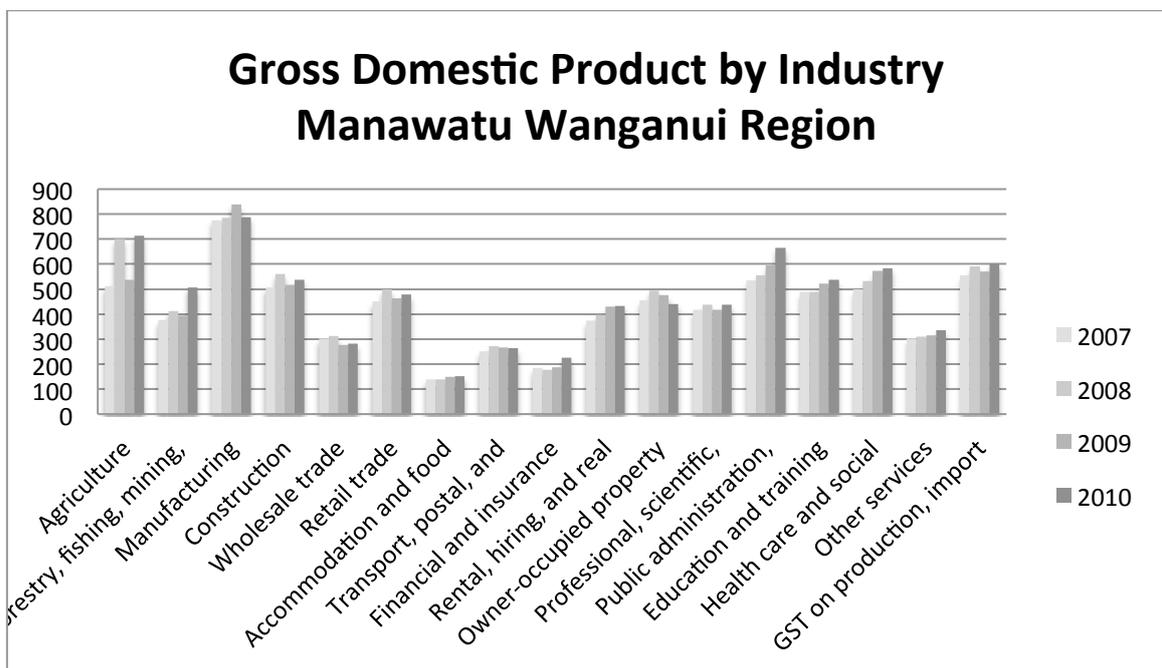


Figure 2. Gross Domestic Product by Industry. Source Statistics New Zealand

As economic activities increase so will the demand for water abstraction. The largest user in the region is the hydroelectric power industry. According to the latest regional

environmental report 4,752,000 cubic meters of water are used daily for electricity generation and 1,340,227 cubic meters are distributed for agriculture, industry and town water supplies (Horizons Regional Council, 2013). These amounts double the 558,527 cubic meters that were consented in 1997.

Freshwater is used for several purposes; drinking, swimming, stock water supply, irrigation or electricity generation and is abstracted either from surface or ground water sources. Some ground water sources are connected to surface sources. For this reason it is important that Bores are regulated. Consent in high densities could deplete groundwater deposits. When groundwater levels are low they run the risk of being flooded by salt water, which can permanently damage groundwater deposits.

Increasing water demand and water quality degradation stand out from all other environmental issues in the region, accordingly the council has decided they are highest priority in the One Plan policy draft.

2.2 Challenges

The challenges faced by the council are complex. On one hand they must consider the ecological processes that take place in rivers, lakes and groundwater sources; while at the same time regulating discharges that affect rivers and lakes. Like wise rivers and lakes display seasonal changes, these need to be maintained for ecological health while satisfying the demand of consented users (Manawatu-Wanganui Horizons Regional Council, 2014a). More specifically the council will need to meet the demands of a booming economy.

Water allocation plays an important role because consenting too much abstraction could endanger future water supplies. According to Marie Claark (2014) the Council

conducted a water frequency analysis to establish core allocation limits. In this analysis the minimum flows are established to regulate the amount of abstraction and ensure that out of streams users have enough water supplies to meet their demands. Summarizing Horizons Regional Council will need to establish good management practices that will guarantee sustainable development satisfying stakeholders needs.

2.3 Strengths

2.3.1 Issue priority

The fact that water quality degradation and water quantity, have been prioritized from all other environmental problems in the policy draft, suggests that Horizons Council has correctly identified the issues affecting the region. This is regarded as an important step during a policy cycle (Bridgman, 2003) that will strengthen the policy.

2.3.2 Policy-led Science

To support their policy Horizons used sound technical information. The scientific team played an important role providing reports on water quality parameters over long periods of time (Ballantine, 2009). This is a good example of Policy-led Science that strengthens the water policy draft, because it will help forecast and monitor future policy outcomes consequently it will determine the policy effectiveness (Taylor, Green, Phipps, & Frances, 2004).

2.3.3 Integrated Water Management Framework

Similarly the scientific team also supported the arrangement of 44 Water Catchment Zones and 117 Subzones (McArthur, 2007). Water catchment zones are the basic units for the Integrated water management framework for the accomplishment of the policy goals in terms of water quality, water quantity and activities in the beds of rivers and lakes (McArthur, 2007).

The development of this framework was also supported by the assessment of values assigned by community stakeholders (Ausseil, 2007). Within this framework there are values for natural habitats, species migration, recreation, trout fishery, electricity production and water supply, just to name a few. These values are a guiding principle in the policy that will allow the council more control and therefore measure each zone environmental performance.

2.3.4 Water quality targets

Water quality targets provide a standard to maintain the selected values for each water management zone (Manawatu-Wanganui Horizons Regional Council, 2014a). In cases where water quality is in good condition the targets only play a control role; in contrast in surface water bodies that are polluted, the targets will be used as a management goal.

2.3.5 Water Allocation Framework

The water allocation framework was built on several projects that estimated core allocation limits and minimum flows (Claark, 2014). Estimating allocation limits allows the council to protect surface and groundwater sources from depletion while maintaining provision to all consent holders. Consent applicants must comply with water telemetry take device to monitor the amount of water allocated to each user. Setting limits is a measure to protect the individual characteristics of values in each water management zone (Horizons Regional Council, 2013).

3 Weaknesses (500)

3.1.1 Poor policy combination

Horizons policy draft on water management seems to lack what Gunningham et al. (1998) describe as “Smart Regulation”. This can be regarded as the combination of multiple policy instruments that are complementary and can produce better results (Gunningham, Sinclair, & Grabosky, 1998). Most of the regulatory instruments presented by the policy are “command and control” with a couple of “self-regulatory” and “voluntary” instruments. This will reduce the possibility for the council to achieve the policy goals.

3.1.2 Command and control

The vast amount of “command and control” regulations can be seen in chapter thirteen and fifteen of the One Plan, where permits and environmental standards are described. As stated by Gunningham et al. (1998) “command and control regulation can be highly dependable if adequately enforced, but commonly tend to be inefficient”. Therefore the use of heavy command and control instruments is not appropriate.

3.1.3 Absence of economic instruments for large abstractors

Since one of the identified issues is in fact water demand, it would be expected that some “economic instruments” would be applied to large water abstractors. For example the hydroelectric power industry is recognized in the draft as the largest abstractor. The hydroelectric potential for future exploitation is also noted. However there isn't one economic instrument or policy mix to regulate it this industry within the 10 year life span of the policy (Manawatu-Wanganui Horizons Regional Council, 2014a).

The other large abstractor is the dairy industry. They are aware of the impact their industry has caused and thus have implemented a “voluntary instrument” called the

“Sustainable Dairying: Water Accord” which was signed by Dairy NZ, Ministry for the Environment, Ministry of Agriculture and Forestry, and New Zealand Regional Councils.

The accord was strongly criticized by the Green Party because this was a modification of the previous 10-year-old “Dairying and Clean Streams Accord” which in their point of view was not effective (Edlin, 2013). Hence, this could also underline the weakness of voluntary policy instruments which according to Gunningham et al. (1998) when used in isolation have low reliability.

“Smart regulation” is being used by developing and developed countries. In a recent study from water resource management models Elabras et al. (2013) found a convergence in the use of economic instruments like water usage charges, water rights, water markets and trading; in combination with command and control regulations (Elabras Veiga & Magrini, 2013)

3.1.4 Isolated Policy Instruments.

Other policy instruments appear in the draft applied in an isolated way. For example, in Lake Horowhena and other Coastal Lakes a “Self-Regulatory” instrument will be implemented through an Industry Code of Practice for Commercial Vegetable Growing with landowners and agencies to protect lakes water from runoff fertilizers. Other instruments used isolated are education for on-site wastewater management and education in schools.

3.1.5 Short term policy

Ten years is a very short time frame to implement a policy, it has taken almost the same amount to redesign the first management plan and the new draft is still under

consideration. As stated in the document water quantity demand increases each year and by the time the policy is approved changes will need to be made. Brazil's policy of water management has taken 15 years to implement and still has not been successfully applied in all the areas it is supposed to affect (Elabras Veiga & Magrini, 2013).

4 Conclusions

In conclusion Horizons policy mix relies on heavy "command and control" instruments supported by isolated "self-regulatory", "voluntary" and some "education" policy instruments. Perhaps this policy mix will maintain under control small to medium scale water abstractors. However it will be difficult to determine if they will have the same effect on the larger abstractors. As a consequence, the pollution process that has been affecting water quality in the region will probably keep increasing.

5 Recommendations (250)

The combination of economic instruments with command and control regulation would make a better choice of policy instruments. Some of the economic instruments illustrated by Veiga et al (2013), like water charges, water rights and water markets could render better results. Also scientific data should continue to provide feedback for the evaluation of policy instruments and their environmental performance.

6 References

- Ausseil, O. (2007). *Identifying community values to guide water management in the Manawatu-Wanganui Region : / technical report to support policy development* (text No. 1877413763). Palmerston North: Horizons Regional Council. Retrieved from <http://ezproxy.massey.ac.nz/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=edsnzl&AN=nlz.12336427&site=eds-live&scope=site>
- Ballantine, D. J. (2009). *Water quality state and trends in the Horizons region*: National Institute of Water & Atmospheric Research.
- Bridgman, P. (2003). *Australian policy handbook* (3rd ed ed.). Crows Nest, N.S.W.: Allen & Unwin.
- Claark, M. (2014). [One Plan Water Allocation Framework Lecture].
- Edlin, B. (2013). Industry must clean up. *New Zealand Dairy Exporter*, 89(1), 90-91.
- Elabras Veiga, L. B., & Magrini, A. (2013). The Brazilian Water Resources Management Policy: Fifteen Years of Success and Challenges. *Water Resources Management*(7), 2287.
- Gunningham, N., Sinclair, D., & Grabosky, P. N. (1998). *Smart regulation : designing environmental policy / Neil Gunningham, Peter Grabosky, with Darren Sinclair*: Oxford : Clarendon Press ; New York : Oxford University Press, 1998.
- Horizons Regional Council. (2013). *State of the environment report of the Manawatu-Wanganui region*. Palmerston North, N.Z.: Horizons Regional Council.
- Manawatu-Wanganui Horizons Regional Council. (2014a). *Proposed One Plan: Chapter 6 Water* (1877413682). Palmerston North, N.Z.: Horizons Regional Council,.
- Manawatu-Wanganui Horizons Regional Council. (2014b). *Proposed One Plan: the consolidated regional policy statement, regional plan and regional coastal plan for the Manawatu-Whanganui Region* (1877413682). [Palmerston North, N.Z.]: Horizons Regional Council,.
- MBIE. (2013). *Regional Economic Activity Report*. New Zealand: Ministry for Business, Innovation and Employment.
- McArthur, K. (2007). *Development of water management zones in the Manawatu-Wanganui region : technical report to support policy development* (Non-fiction No. 187741347X). Palmerston North, N.Z.: Horizons Regional Council, 2007. Retrieved from <http://ezproxy.massey.ac.nz/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=cat00245a&AN=massey.b1913088&site=eds-live&scope=site>
- McNeill, J., Cheyne, C., & Summers, R. (2013). Spatial Dimensions of New Zealand's Environmental Management. *New Zealand Geographer*, 69(2), 136-149. doi: <http://onlinelibrary.wiley.com/journal/10.1111/%28ISSN%291745-7939a/issues>
- Ministry for the Environment. (2006). *Your guide to the Resource Management Act : an essential reference for people interested in the RMA*: Wellington, N.Z. Ministry for the Environment.
- Taylor, B., Green, W., Phipps, H. L., & Frances, P. (2004). *Missing links : connecting science with environmental policy / [investigation team, Bruce Taylor, Wren Green, Hilary Phipps ; editor, Pauline Frances]*: Wellington [N.Z.] : Parliamentary Commissioner for the Environment, 2004.