

A GLIDE PATH FOR WATER INVESTMENT: LESSONS FROM ENGLAND AND WALES

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ABSTRACT

OFWAT (The Water Services Regulation Authority) is the economic regulator of the water and sewerage sectors. Every 5 years OFWAT renegotiates price limits with the water companies on the basis of a series of initiatives that must be addressed in the next 5 year Asset Management Period (AMP). The guidance on these initiatives is produced by the Department for Environment, Food and Rural Affairs (DEFRA), which, by its nature oversees the entirety of the water industry.

Prior to each AMP, DEFRA sets out new requirements for the water companies, setting expectations and areas of increased level of service required. This gives DEFRA the ability to guide the progress of the industry in a structured and staged manner, focusing on new areas as needed at each AMP. This means that each AMP can address the most pertinent issues in the industry at that time, thus bringing about staged and steady improvements to the water services and environment. The latest AMP (AMP6) focuses on improved efficiency and reducing energy demands to bring about lower operational costs.

Setting aside the issue of privatisation, could the approach taken by DEFRA to guide the investment decisions of the UK private water industry have application to the public water industry in New Zealand?

This paper looks at what lessons can be taken from the UK's governance approach to improvements in the water industry and whether a similar approach of setting a "glide path" for priority investment decisions for the New Zealand public water industry may have merit.

KEYWORDS

Reform, Regulation, Governance, Three Waters

1 INTRODUCTION

The New Zealand water industry suffers from a fragmented governance structure with no single ministry responsible for all water sectors. Guidance for the local and regional councils is provided by the Ministry of Health, Ministry for the Environment, Ministry for Primary Industries and the Resource Management Act. While the regulation of the industry is undertaken by the Drinking Water Assessors and the 10 Regional Councils.

In the UK, the Ministry in charge of the entire industry; water, wastewater, agriculture, fisheries and environment, is the Department for Environment, Food and Rural Affairs (DEFRA). Regulation of the guidance provided by DEFRA is undertaken by three independent agencies, the Drinking Water Inspectorate, the Environmental Agency and the Water Services Regulation Authority (OFWAT).

	UK	New Zealand
Guidance:		
Drinking Water	DEFRA	Ministry of Health
Environment	DEFRA	Ministry for the Environment Ministry for Primary Industries Resource Management Act
Regulators:		
Drinking Water	Drinking Water Inspectorate	Drinking Water Assessors
Environment	Environment Agency	11 Regional Councils and 5 Unitary Authorities
Price	OFWAT	District Council LTP

With the New Zealand water industry staring down the barrel of reform, now is the most pertinent time to look more closely at water sectors in other countries. We can ascertain what worked well and what may be modified and applied to the industry in New Zealand.

“It takes a wise man to learn from his mistakes, but an even wiser man to learn from others.”-
Proverb

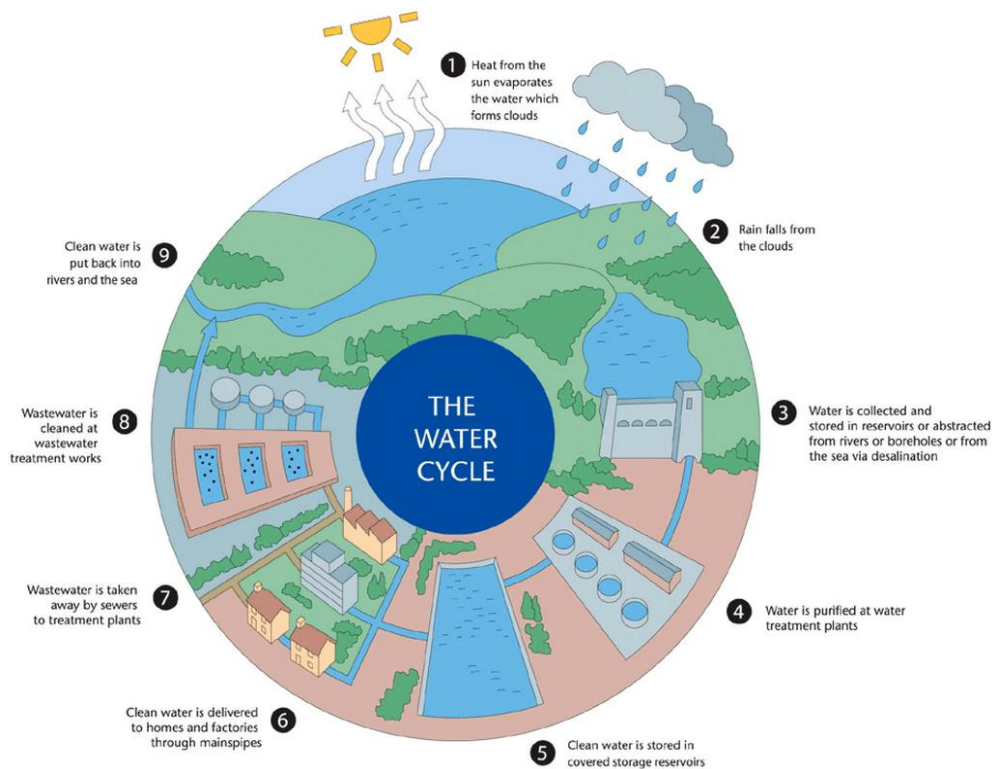
Our industry is not unused to acts of significant government reform. In 1991 the Resource Management Act (RMA) brought together a large number of acts, regulation and orders (a total of 69 Acts and 19 regulations) in an endeavor to integrate the regulation of the management of all natural and physical resources. The Act was a pioneering piece of legislation and with the concept of “sustainable management” at its core was unique in the world at the time of its inception.

“...to ensure the management of the human use of the biosphere to yield the greatest sustainable benefits to present generations while maintaining the potential to meet the goods and aspirations of future generations.” – RMA, Part 1, Paragraph 3

The RMA’s approach to the integrated management of New Zealand’s resources was brimming with good intentions of a sustainably managed environment. However, it has suffered from criticisms of being ineffective in managing adverse environmental effects or overly time-consuming and expensive with bureaucratic restrictions. The RMA covers a vastly board scope as it deals with both the built and the natural environment, and as such we do not have a specific Water Resources Act.

Our governance of the water sector needs to be consolidated so that we can manage all New Zealand’s water resources as one entity, to consider all aspects of the water industry as a whole, encompassing the needs of both the user and the environmental. This concept must be at the core of the governance structure for the industry. Only then could the water sector be regulated as one complete environment, considering all aspects of our water resource from catchment management to demand and leakage, from wastewater collection, treatment and disposal to receiving environments. There is no denying after all that it is gracefully and inextricably linked.

Figure 1: The Water Cycle (Watertrain, 2013)



This approach is already taken via the Regional Councils and Unitary Authorities implementing the RMA, however consistency between the 16 bodies is difficult to achieve when outcomes are not specifically measured, reported and benchmarked.

An integrated governance structure would have many benefits for the industry as a whole. It could bring;

- A holistic view of governance and where the environment needs to be in 20 years, this can guide investment priorities for the local authorities.
- A consistent approach to standards and performance when implementing new regulation (such as the national policy statement for freshwater management – NPS-FWM).
- Affordability review by price regulators could pave the way for cross-subsidies, similar to Watercare’s uniform rate structure for the Auckland region.

The question then becomes how to we go about developing an integrated approach to the management of our water industry and environment? Can this be achieved without hindering progress through increased bureaucratic processes and demands on our service providers? How do we bring together the industries and support them to improve the water resource management without bankrupting or alienating our smaller district councils? The best approach would fit in with the water sector structure we have already and support it to meet the increasing service demands while bringing about improved environmental standards.

2 NEW ZEALAND WATER INDUSTRY

2.1 CURRENT INDUSTRY STRUCTURE

The New Zealand water industry is currently governed and regulated from a number of different central and regional government bodies. Ranging from the Ministry of Health to the Ministry of Primary Industries, each organization regulates a different portion of the complete water picture.

2.1.1 MINISTRY OF HEALTH

Drinking water quality is regulated at central government level with the Ministry of Health having set stringent targets across the board for the treatment and management of the drinking water sector (Drinking Water Standards New Zealand 2005, revised 2008 - DWSNZ). There is a good level of regulation for this part of the industry; however this has only been mandatory since the Health (Drinking Water) Amendment Act 2007 and is still not mandatory for rural supplies. This regulation deals with drinking water quality only and does not specifically regulate efficiency, resilience, customer service or price.

It is of course appropriate for the Ministry of Health to set out the quality standards for drinking water in New Zealand to ensure the health benefits of all. However, the Ministry has set stringent targets for all councils to meet in terms of drinking water quality, and for some councils, compliance with these standards for small communities is challenging on their modest budgets.

2.1.2 REGIONAL COUNCILS

Freshwater abstraction and wastewater treatment discharges are regulated at the Regional Council level, tasked with interpreting the Resource Management Act and liaising with the Ministry for the Environment to set limits. It is the Regional Council's who are responsible for regulating the management our freshwater resources, defining what can be taken from them and what can be discharged into them.

2.1.3 MINISTRY FOR PRIMARY INDUSTRIES (MINISTRY FOR PRIMARY INDUSTRIES, 2014)

The Ministry for Primary Industries (recently integrated Ministry of Agriculture and Forestry and Ministry of Fisheries) is also responsible for aspects of the environment and natural resources. On the list of key priorities for the Ministry is "Water Management Reform".

The Ministry for Primary Industries surely has conflicting agendas? Are they not responsible for promoting the growth of the agriculture sector, while also responsible for protecting fisheries against runoff from the same? Dairy exports alone earn over \$11 billion a year in exports (Statistics NZ, 2013) while the New Zealand fisheries earn only around \$1.5 billion (Statistics NZ, 2013).

There is of course the Dairying and Clean Streams Accord, a voluntary agreement between Fonterra, the Ministry for the Environment and the then Ministry for Agriculture and Forestry created in 2003 prompted by the "Dirty Dairying" campaign. The Accord is not independently regulated and as such has come under much criticism from other organisations such as Fish and Game.

2.1.4 MINISTRY FOR THE ENVIRONMENT

And where does the Ministry for the Environment stand in all of this? Managing our biodiversity, our oceans, our water and waste, and climate change, using what legislation? The national policy statement for Freshwater Management, revised this year, is to be fully implemented by Council's by 2025. It is hoped that this policy will bring about real changes to the management of the freshwater environment, however the last attempt at this was abandoned by the national government in 2009 due to lack of buy-in.

2.1.5 WATER SUPPLIER

The water supplier at the local government level has to appease all these regulators with their different standards and targets. They are pulled between complying with regional council, supporting and promoting industry in their district and complying with national regulations. In smaller councils this all has to be achieved with their often modest budgets. Who defines which targets are the most important to the water supplier at any one time? The ministry who threatens legal action the loudest? The District Engineer? The Councilors?

3 WATER QUALITY IN NZ

The Ministry for the Environment provides reporting on the situation of our water resources in New Zealand. Some of this information is presented here to provide a snapshot of the situation we currently face in New Zealand. The information is taken from the latest available on the Ministry for the Environment's website.

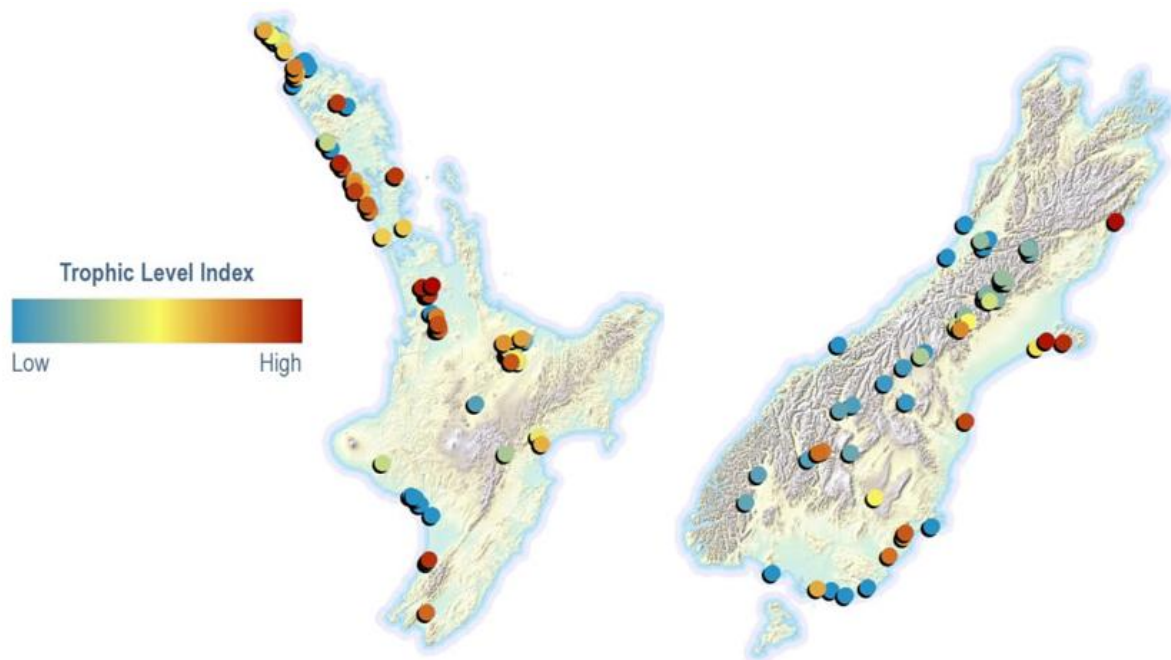
3.1 LAKE WATER QUALITY (MINISTRY FOR THE ENVIRONMENT, 2013)

Of the lakes with data available:

- 33% have low or very low levels of nutrients, meaning they are of good quality.
- 34% have high levels of nutrients, meaning the water quality is degraded.
- 10% are classed as 'hypertrophic', meaning they are saturated with nutrients and their water quality is extremely degraded.

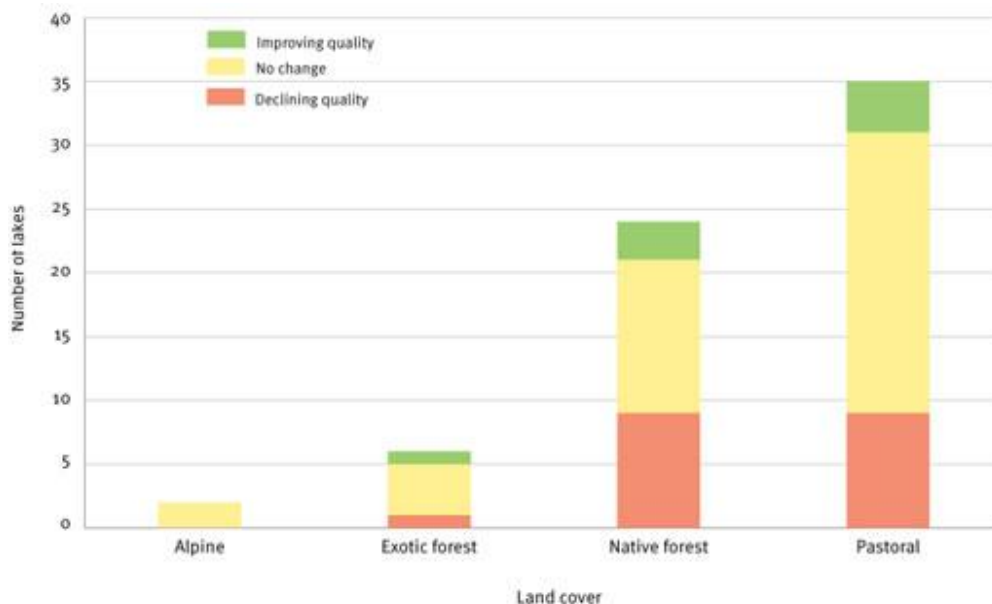
The following graph presents results using the most recent data available in 2010.

Figure 2: *Map of Trophic levels of New Zealand Lakes (Ministry for the Environment, 2013)*



The following graph shows the trends in water quality in our freshwater lakes. As shown the number of lakes with declining water quality far outstrips the lakes with improving quality.

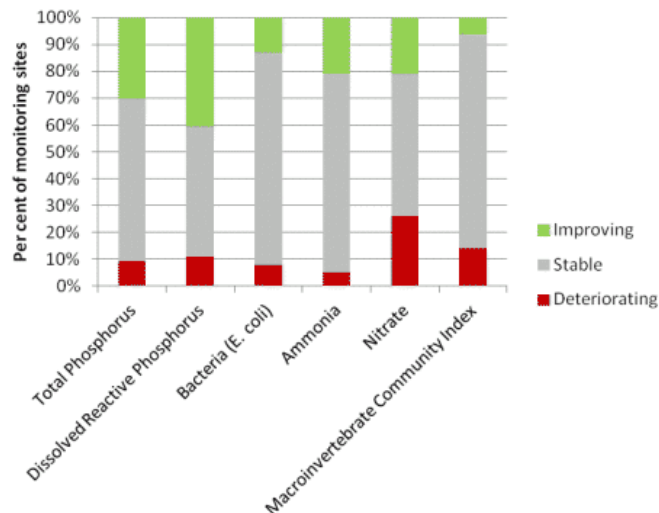
Figure 3: *Trends in Lake Water Quality (Ministry for the Environment, 2013)*



3.2 RIVER WATER QUALITY (MINISTRY FOR THE ENVIRONMENT, 2013)

The graph below shows the trends in river water quality:

Figure 4: Trends in River Water Quality (Ministry for the Environment, 2013)



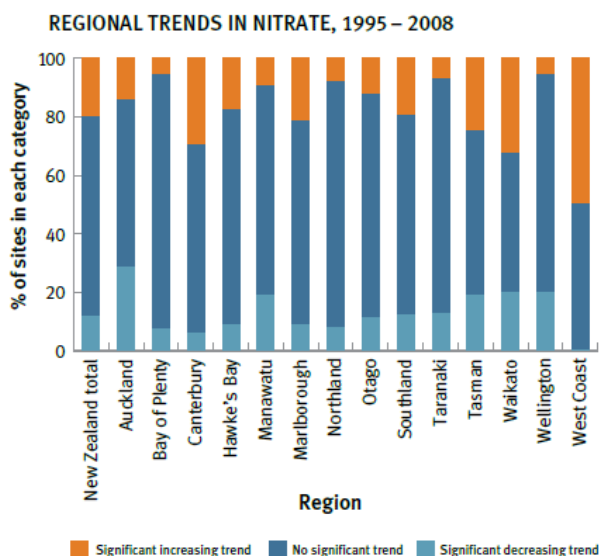
Nitrate quantity is shown to be increasing in over 25% of sites. The most significant source of nitrate at a national scale is animal urine: ammonia in urine is rapidly nitrified by bacteria in soil, where it leaches into waterways as nitrate.

Macroinvertebrates are a biological indicator of river condition, and reflect impacts like changes in water quality and habitat. Macroinvertebrate condition showed no change at most sites, but declined in more places than it improved.

3.3 GROUNDWATER QUALITY

More than one third of groundwater sites monitored by the Ministry for the Environment have nitrate levels above the natural background levels. Elevated nitrate levels can generally be attributed to leaching of fertilizer and stock effluent into the water table.

Figure 5: Trends in Ground Water Quality (Ministry for the Environment, 2010)

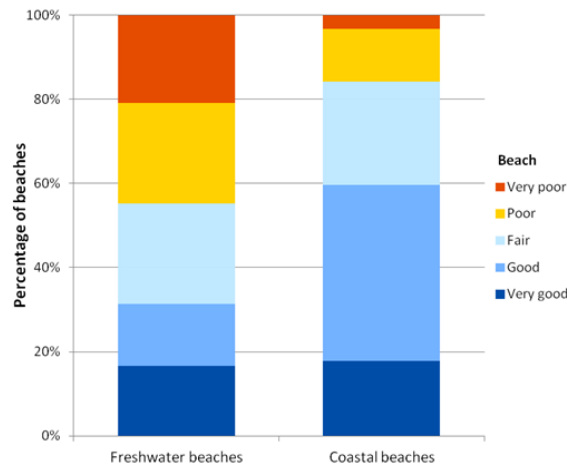


The graph shows that over 20% of our monitored sites had deteriorating nitrate levels, which was double the number of sites with improving quality.

3.4 BATHING WATER QUALITY (MINISTRY FOR THE ENVIRONMENT, 2012)

Our bathing water quality at samples sites is represented in the graph below:

Figure 6: Snapshot of Bathing Water Quality (Ministry for the Environment, 2010)



This graph indicates that nearly half of our freshwater swimming spots are of poor quality or worse. It also shows that nearly 20% of our coastal swimming spots are of poor quality.

3.5 STATE OF OUR ENVIRONMENT

Luckily, due to our low population and abundance of freshwater, the picture painted above is not as bad as it could be. However, the situation is not improving, if anything, the trends show that the quality of our water environment is declining.

The Ministry for the Environment has taken significant steps with the revised National Policy Statement for Fresh Water Management and committing government funding for cleanup of the Waikato River, Rotorua Lakes and Lake Taupo. However, will this be enough? Looking at the UK water industry as a case study may give us more tools and guidance for managing our own industry and environment.

4 UK WATER INDUSTRY

The water industry in the UK was privatised 1989 under the Thatcher government. At this time there were 10 public regional water authorities. These were sold to private companies with the view to increase investment in an ailing industry faced with stringent European compliance standards.

At the same time as privatisation occurred, the industry was largely reformed with the introduction of OFWAT the economic regulation agency. The formation of OFWAT followed the model of infrastructure regulatory agencies in other sectors such as telecommunications and energy.

4.1 HISTORY

Up to the 1950's the water industry in the UK was highly fragmented. It had developed on an ad hoc basis to meet the needs of a growing population and growing demand resulting from the industrial revolution. Levels of water and sewerage service varied greatly around the country with each area organizing its own infrastructure needs and level of operation. At that time there were more than 1,000 water bodies and 1,400 wastewater bodies in operation with planning being a highly localized activity.

Post-war legislation was aimed at consolidating the water sector to benefit from economies of scale and provide additional centralized funding. The Water Resources Act 1963 was implemented in response to the severe droughts in 1959 and flooding events in 1960. This Act further developed the concepts of integration and brought about 'abstraction permits' for groundwater rights.

In the early 1970's ongoing problems with water resource planning and future demands forecasts prompted further restructuring of the industry.

4.1.1 1973 WATER ACT

The Water Act 1973 formulated 10 new regional water authorities which were broadly based on river catchment areas. Existing statutory private water companies remained unaffected. This move fully integrated the management of water resources, drinking water supply and sewerage services. Capital for infrastructure investment was gathered by borrowing from central government and revenue from services.

Although this re-structure aided in consolidating services, investment in the infrastructure was low and capital was hard to obtain. Concurrently, environmental demands were increasing both from public perception and from impending stringent European legislations.

The following 1983 Water Act made some constitutional changes to reduce the role of local government in decision making and give access to private capital markets. These changes, however, did not result in a significant decrease in pollution incidents and there was little desire to provide additional government funding.

4.1.2 1989 WATER ACT

In 1989, together with the privatisation of other public sectors, the water authorities and their assets were transferred to limited companies and floated on the London Stock Exchange. This was accompanied by a one-off injection of public capital, the write-off of associated government debt and the provision of capital tax allowances.

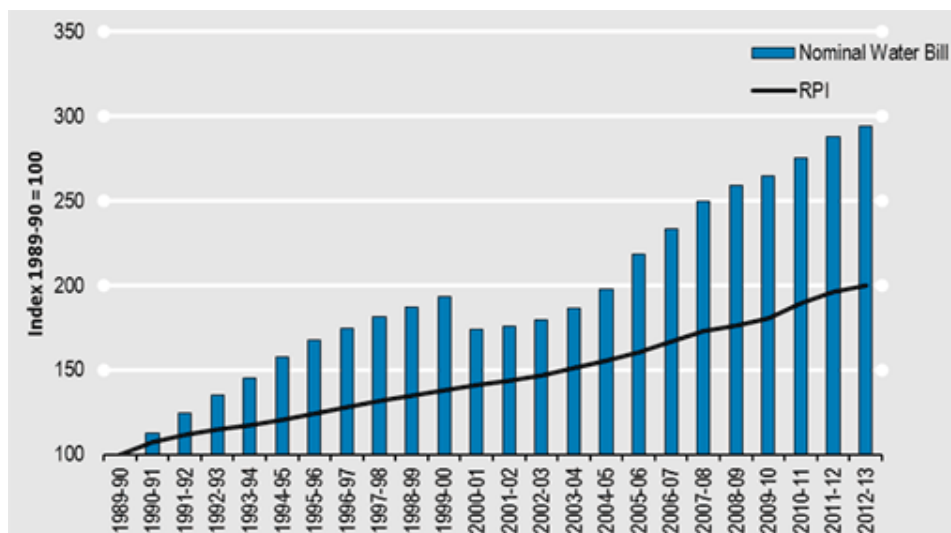
At the time, the UK water industry consisted of ailing and neglected infrastructure. The industry required significant capital investment to meet increasing service requirements and stringent European standards including the Bathing Water Directive, the Drinking Water Directive and the Urban Wastewater Directive. The prevalence of polluted beaches and rivers had given the UK the mark of 'the dirty man of Europe'.

4.1.3 OUTCOMES OF REFORM (DEFRA, 2013)

It is estimated by the Department for Environment, Food and Rural Affairs that the privatisation of the water industry has attracted £116 billion of investment in the water companies. Funding which would have otherwise had to be provided by the consumer. This allowed forward investment based on future revenue to provide the improvements needed to meet the stringent European legislations.

While compliance with most of the European directives has been achieved, critics against privatisation cite the fact that the water tariffs increased by 46% in the first nine years while company profits more than doubled. The graph below shows the inflation of the water bill in the UK since privitisation in 1989.

Figure 7: Water Price Inflation in the UK (Tinson, 2013)



4.2 REGULATORS

At the same time as privatising the water companies, the government introduced significant reforms to the regulations to ensure the interests of the customers and the environment were protected. This step essentially separated the provision of water and sewerage services from the regulation of the industry.

Three separate independent bodies were established to regulate the water companies;

1. Environmental Regulator – National Rivers Authority
2. Drinking Water Quality Regulator – Drinking Water Inspectorate
3. Economic Regulator – Office of Water Services (OFWAT)

In 1996, the National Rivers Authority was replaced with the Environment Agency and in 2006 OFWAT was replaced with the Water Services Regulation Authority. The organisation is still known as OFWAT.

4.3 OFWAT AND THE AMP PERIODS

OFWAT is the economic regulator for the water and sewerage companies in England and Wales. OFWAT is responsible for ensuring that water companies provide consumers with good quality service and value for money. This involves the 5-yearly price review (PR) where OFWAT re-negotiates with the water companies to set price limits on water charges. The role of OFWAT is to ensure that companies deliver the best deal from the consumers and the environment in the long term.

The regulations took on the form that in the year prior to the next price review, the central government (DEFRA) issues a summary of guidance to the water companies to aid them in preparing a business plan for the forthcoming Asset Management Period (AMP). This guidance gave the water company and OFWAT the basis for negotiating the level of investment required and the water rates which would apply for the next 5 year AMP period.

The guidance at each AMP period was focused on either continuing to work to meet objectives set out at the last price review, or introducing new focuses related to government, environmental regulations, European standards etc. This meant that the central government could focus the industry on the key issues at each stage, typically concerning environmental priorities and social aspects. Thus far, there have been 5 completed AMP periods, with AMP6 covering 2015-2020.

4.3.1 AMP1 (1990-95)

After the implementation of reforms, the first AMP period focused priorities on meeting stringent environmental and drinking water standards set by the European Union. These included the Bathing Water Directive, the Urban Waste Water Treatment Directive and the Drinking Water Directive.

Additionally, incentives were placed on OPEX efficiency and CAPEX expenditure.

This AMP also saw the inception of a performance framework which included nine measures (DG1-9) for assessing the service and delivery performance of the water companies;

- DG1: Adequacy of water resources
- DG2: Inadequate pressure
- DG3: Supply interruptions
- DG4: Restrictions on water use
- DG5: Flooding from sewers
- DG6: Billing contacts

- DG7: Written complaints
- DG8: Bills for metered consumers
- DG9: Ease of telephone contact

These performance indicators were used by OFWAT to assess the performance of the water companies at the end of each AMP and helped them to direct the improvement programs for the next AMP. These performance indicators worked well and were phased out in 2010. These indicators made sure that items which were not already regulated by the Drinking Water Inspectorate (drinking water quality) and the National Rivers Authority (environmental standards) were able to be regulated by OFWAT.

4.3.2 AMP2 (1995-2000)

At the beginning of AMP2, there was still a significant amount of work to be done on the objectives set out in AMP1, as such, the focus of this price review was similar to AMP1.

A big push was applied on sewage treatment systems to work towards compliance with the Urban Waste Water Treatment Directive and the Bathing Water Directive. Focus was also placed on continuing to work towards compliance with the Drinking Water Directive.

By the end of AMP2, significant progress could be seen in compliance with the Bathing Water Directive, with compliance with the mandatory standards rising from 79% to 94%. A marked improvement could also be seen in river water quality in England; however Wales only showed little improvement.

Figure 8: Compliance with the Bathing Water Directive (DEFRA, 2002)

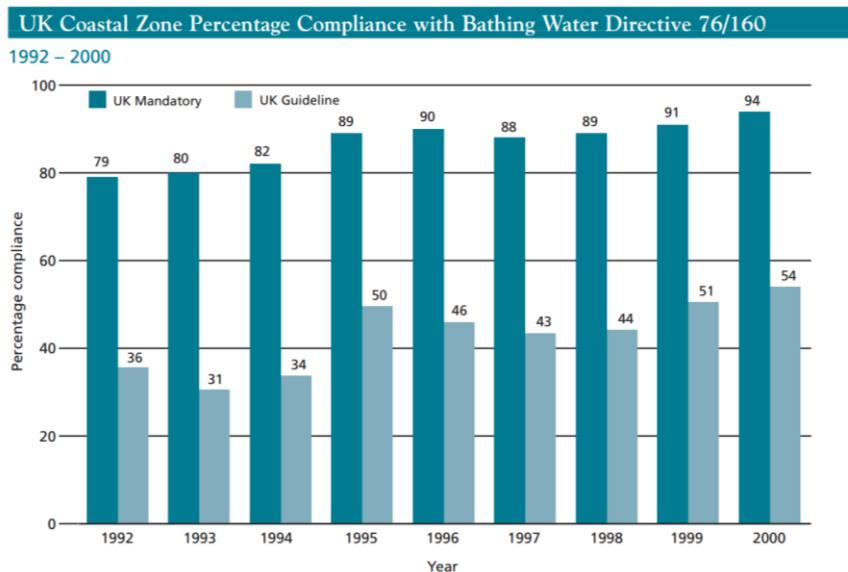
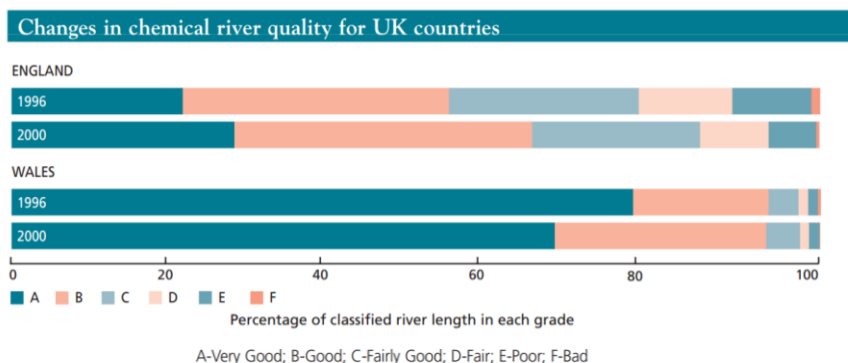


Figure 9: UK River Quality (DEFRA, 2002)



4.3.3 AMP3 (2000-2005)

AMP3 was the last AMP period which focused on compliance with the European directives. By the end of this period (2005) the Drinking Water Directive targets were largely met by the water companies.

A big push was now applied to work towards OPEX and CAPEX efficiency within the water companies. New tools were developed for measuring expenditure such as the “Unit Cost Model”. This meant that OFWAT was able to calculate simple unit costs for each company enabling comparison and contrast between companies.

By this stage, the Price Review procedure had become a detailed review of the water companies business plan to “sharpen the pencil” of the price negotiations. The direct impact of this approach can be seen by the dip in median water bill prices in 2000, shown in Figure 7.

4.3.4 AMP4 (2005-2010)

With compliance with the drinking water standards largely complete, OFWAT turned their eyes on the level of service and performance provided by the water companies. Focusing on giving customers better value for their charges, the “Overall Performance Measure” was introduced. This ranked companies based on performance against factors such as interruptions to supply, security of supply etc. Rewards were given for the best performers, substantial fines for poor performance or misreporting performance. This saw a shift in the industry focus towards non-statutory requirements.

Other factors which came into focus at AMP4 were security issues in the wake of 9/11 and the business case for improved maintenance.

AMP 4 also saw the focus turn on the new European Water Framework Directive. This directive gave requirements for the qualitative and quantitative status of all water bodies (including marine). This Framework had a different approach of setting steps to reach the common goal rather than the traditional approach of setting limit values.

4.3.5 AMP5 (2010-2015)

AMP5 again turned to focus on drinking water quality with compliance required with the more stringent Drinking Water Directive published in 2003.

Another key focus brought in at this time was resilience, particularly against flooding. This was largely in response to the 2007 floods which took out a number of key Water Treatment Works and left an estimated 150,000 people without drinking water for more than a week (BBC, 2007).

OFWAT also brought in the Service Incentive Mechanism which was a new measure of customer complaints, in an effort to improve customer service.

A big push was also implemented on compliance with the European Sewerage Sludge Directive with expenditure required on mitigating increased volumes of sludge which were being produced from tighter consent conditions.

4.3.6 AMP6 (2015-20)

The negotiations for AMP6 have shown a new focus on efficiency standards and separation of activities to make financing and costs more transparent to the consumer. This comes back to the focus on customer service introduced in AMP4. There are drivers on stretching performance to give better value for money and deliver what the customer wants.

This AMP also continues to work towards the Water Framework Directive. While compliance deadlines are a long way off, many schemes need to be implemented early to meet the targets.

In the most recent review, OFWAT scaled down the cost of capital to 3.7% and linked the returns of business to how well they deliver their performance commitments. This means the scope for financial outperformance from financing is much lower than it has been. This is a significant shift from the model that was set up at privatisation and a cultural change for the companies.

4.4 OUTCOMES

The regulations have now been in place for 25 years, so what have they achieved? There can be no denying that it has been an expensive journey, but at the same time, OFWAT estimates that they have kept bills for customers more than £100 lower than they would otherwise have been. But excepting the financials, which are complicated by the issue of privatisation, has the integrated, centralized, staged approach of DEFRA, the regulators and the AMP's improved the outcomes for the industry?

While it took some 15 years to achieve, 99.96% of drinking water in England and Wales now meets the national and European standards for drinking water quality (DEFRA, 2013). How does New Zealand's progress compare in the 14 years since the drinking water guidelines were introduced and the 10 years since the DWSNZ were adopted?

In 2013, 99% of measured bathing sites met the mandatory standards of the European Bathing Water Directive, while 81.3% met the more stringent guidelines. (Homann, 2013) This is a significant improvement from 2000 which were 94% and 54% respectively (see figure 8).

The Urban Waste Water Treatment Directive required secondary treatment for agglomerations greater than 15,000 p.e. by the 31 December 2000 and at that date the UK was 90% compliant with the requirement. However, by the end of 2007 they were 99.9% compliant (DEFRA, 2012).

OFWAT also states that leakage levels are 35% lower than they were at their peak in the mid-1990s (OFWAT, 2012).

No matter how they got there, it can only be said, that where the UK water industry is now is a much better position than prior to the reforms.

4.5 SMART COMPLIANCE

A buzz word in the UK water industry now is "Smart Compliance". This is regulation which considers environmental outcomes, not just standards. As example of this is the hard limit of achieving <1mg/l NH₃ for wastewater discharges. Compliance with this limit requires high carbon footprints, operating costs and capital costs and the standards for compliance do not vary over the year with the conditions of the environment.

Coming back to the view of the water industry as an inextricably linked cycle between freshwater, drinking water, wastewater, stormwater and our oceans, we can begin to look at compliance in a broader sense. In each situation "compliance" with quality standards for treatment (both water and waste), could be approached from smart thinking and looking at the entire cycle rather than just a hard compliance with limits and standards.

5 LESSONS FOR OUR FUTURE

5.1 WHAT IS THE "GLIDE PATH"?

If the UK water industry was doing it all again from the start, how would they go about getting to where they are now? Would a better long-term view of the environment have prevented revisiting a lot of sites?

"Hindsight is a wonderful thing... looking at where you want to be on the environment and then working back to work out what good looks like for all sides" – Rob Scarrott, Economic and Strategic Manager Thames Water, 2007 to Present

If the New Zealand water industry is to undergo reform, the words above hold wisdom. There may be sense in developing a clear vision of where New Zealand should be from an environmental standpoint in 20 years, then working backwards to figure out how we will get there. We could develop a "glide path for investment" in a sense that key staged initiatives are prioritised and regulated by central government, rather than attacking all angles at once. Knowing what the next step in the road will look like may help to shape investments so that sites do not have to be re-visited. This could help all sectors of the industry reach the long term goals and keep costs lower.

As it is, there are many objectives which are required to be addressed by local councils; drinking water quality (DWSNZ), freshwater quality (NPS-FWM), bathing water quality, resilience, network flooding, leakage, water conservation, sludge disposal, point source and diffuse source pollution.

For council's with modest budgets, the priorities are invariably complying with the mandatory standards and picking the "low hanging fruit" for Regional Councils. Tightening controls on point source contamination is easier than approaching the issue of diffuse sources, but which one will actually make the biggest difference?

A more centralized and consolidated guidance structure would help create consistency and clarity for the local councils and service providers. Every council is starting from a different point and has different environmental and infrastructure challenges to overcome with different budgets. Centralised guidance could help reduce the complexity and confounding factors

In a similar vein, centralising the guidance could also help councils achieve the same outcomes through alternative management rather than simply hard compliance;

- Working to reduce water losses and demand in the network rather than increasing the plant capacity.
- Working to reduce infiltration of stormwater into wastewater networks rather than providing significant capacity upgrades at the wastewater plant.
- Supporting communities to improve their septic tank management to prevent uncontrolled overflows to the ocean.

5.2 WHAT IS THE ROLE OF THE REGULATOR?

Reform does not mean privatisation, they are not necessarily linked, as the Scottish water example has demonstrated. Reform to the structure of our industry may help us to achieve improvements to our water industry and environment together. Our current governance and regulation structure is fragmented with the management of our water resources the responsibility of many different government bodies, creating inconsistency of interpretation and implementation of the regulations.

One approach could be to have a single body, such as DEFRA, which provides guidance to the industry as a whole. A staged approach such as the 5-year AMP period could also be beneficial. Every 5 years, progress on the water providers "glide path" can be assessed and new focuses and initiatives priorities. This assessment can be done on an individual catchment basis, looking at what are the key issues for each water catchment individually. Is security of supply more important for some? Is reducing septic tank overflow a bigger priority for others? Even developing a "glide path" for each council, looking at where the water environment in their district should be in 20 years and how to they get there? This can help prioritise the most critical actions for each Council giving visibility for them of "what is to come".

The role of the regulators in this structure would be the measuring, reporting and benchmarking the services and environmental outcomes on a catchment based approach. The regulators can look at environmental outcomes as a whole rather than individual compliance.

At this time, the only price regulation is the local council's LTP and the increases the ratepayers are willing to endure. As such, a key factor of regulation includes regulating the price point for the users and aiding in cross subsidies between regions. After all, we all benefit from the clean streams and beaches which we enjoy, why should the local ratepayers be lumbered with the responsibility of keeping them that way?

6 CONCLUSIONS

The information given in Section 3 about the status of our water environment does not present a glorified picture of a country committed to "100% Pure". And while agriculture is the "backbone" of our economy, when we look to the tourism industry, we see that it provides over \$7 billion to our economy every year. This is not a market we can afford to lose. Additionally to this is our marketability overseas which links back to how we are perceived on the international stage.

The Ministry for the Environment has taken significant steps with the revised National Policy Statement for Fresh Water Management and committing government funding for cleanup of the Waikato River, Rotorua Lakes and Lake Taupo. Now is the time for developing a “glide path” to where we want to be in 20 years and implementing long term action plans while looking for smart compliance. Our industry must head in the right direction and have guidance and clarity to make the correct investment decisions. We must learn from other countries that have gone before us about **how** to get to where we need to be. Setting limits and regulations is all very well, but without the forethought to develop a pathway to the right answers we may end up spending a lot more and making the wrong decisions in the long run.

One thing that we can be sure of is that, when things are done urgently or in an emergency, they tend to cost a lot more than if they are part of a long term plan. You also may end up with the wrong solution to your problem. The recent desalination plants constructed in Australia which are now no longer being used, was this the correct solution to the problem? Again, hindsight is the most wonderful thing, but we do not want to end up in the situation of putting in place knee-jerk legislation because of one significant event.

Given that the industry is bracing itself for reform, consolidation of the governance and regulatory framework will enable the water providers to make long term and affordable investment decisions.

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