Winery Engineering Association conference 21 – 22 July 2016

Key speaker:

Gerald Hope - Chief Executive Marlborough Research Centre (MRC)

Title: 'Is Sustainability achievable for the predominant land and water users in Marlborough? What role and responsibility do wineries have to mitigate and manage waste in support of landowners?

Mōrena Tēnā koutou - tena koutu katoa

Thank you for the invitation to set the scene for your conference. My initial thoughts for this talk were focussed on the conference theme of achieving sustainability through good management, use of new technology, the better use of winery resources.

I should caveat that statement by adding – as required by the Marlborough District Councils recently notified Marlborough Environment Plan.

To warm up your proceedings I intend to capture a vision for the future based on what has gone before. By referring to our history we take away lessons that can be imbedded in policy for future planning.

In Marlborough we good available land, (diverse soils) water (run of river, aquifer and stored) sunshine and clean air. I appreciate that many of you in your daily work are involved in a very practical way that supports the huge growth and success of the wine industry in Marlborough. All of you will be aware of the guiding principles contained in the RMA 1991 – *"Sustainable management"* is

Managing the use, development and protection of natural and physical resources in a way, or at a rate which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while-

(a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and

(b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and

(c) Avoiding, remedying or mitigating any adverse effects of activities on the environment

So looking back at our heritage before the shackles of legislation were applied to land use and development I refer settlement in the Wairau Valley by Maori - over 800 years ago at the mouth of the Wairau river on Te Pokohiwi o Kupe (Wairau Bar)

There a thriving village was established that evolved into a commercial hub based on bountiful food supplies. From the land, the labyrinth of waterways.

The Boulder Bank and Vernon lagoon has a rich history both for archaeology and as a source of seafood. More on that later.

Looking down and across the Wairau Valley is the dominant peak called The NED.

In Maori this 900 metre mountain is called Te Hou - being the face, more precisely the nose of a celebrated Rangitane ancestor who looks over his land - literally the long gaze of Te Hou.

Those first Maori settlers - left their footprint on this land in more ways than one. They burned native tussock and grasslands to drive Moa to the coast for slaughter to feed their

whanau and Iwi. They dug out waterways and created drains that were navigable by canoe – to fish and move produce around for trade. Change had begun.

European settlement began in the late 1840's. The Wairau, Awatere valleys and the sub regional valleys filled up with pastoralists followed by arable and horticultural farmers.

In the hinterland of the Marlborough back or High Country sheep and beef farming established that fed off native grasses. In the first 60 years of settlement the slasher, match (Bryant & May, Swan) and saw and plough were the common tools.

I pay tribute to the fortitude of our forebears who took on the challenge of breaking in the land by clearing forest, bush and scrub, digging drains and diverting rivers and streams. They set up the region for a wide variety of primary production.

Their need was driven out of necessity to produce food, sell at market and survive season after season.

The Marlborough landscape has changed as predominant crops were replaced to meet changing demand over the past 160 years.

Productive land use accounts for 52.6% of the area in Marlborough. This is comparatively low by NZ standards. It's also significant that 30% of the workforce is involved in primary industries

With 26,000 hectares of grapes and heading toward 30,000 hectares in the next few years we are fortunate to have a great product in sauvignon blanc that is married to a great story.

I acknowledge that Marlborough as a distinct geographical Sunbelt region offers wide choice for other primary production. However the blanket of grape plants is here to stay and we must plan for the future.

I salute the success of wine - who could have predicted such success and growth back in 1973?

Today we export $1.6 billion and are surging toward $2 billion and likely to remain in the top six export products from NZ.

Today with smart equipment, greater knowledge and fantastic innovative technology evolving; we are in a position to enhance the environment. The daily use of satellite imagery and geographic positioning allowing precision viticulture - real time on farm management that supports and backs up decision making.

We use modern tools to connect us to vineyard, winery to market. Fully integrated winery operation management systems. (one of our food and beverage cluster members is Vinwizard) who some of you will be familiar with.

Through the use of technically advanced decision support tools we have choice as to how the land and water is used to maximise the best use of resources, and minimise effect on the environment.

Plant growth and plant health can be monitored immediately during the growing season. Predictive yield models exist to assist crop management decisions, soil moisture and plant water demand measured real time .

Crops can be grown depending as much on consumer preference and choice as on soil type, elevation and available water.

Not being an engineer has its advantages – I can be amazed and impressed and I am impressed with new integrated winery management systems that are available through innovators such as Vinwizard.

There is huge potential for greater use of these systems that reach out into the environment so that there is a seamless management system, inside/outside - using smart programming and real time monitoring from anywhere anytime.

What about diversification?

Have we put too many eggs in one basket in this region?

At my organisation – over the past three years we've been working with a group of 25 businesses in the food and beverage sector. We live and work in a Food and Beverage Valley (FAB Valley) and that includes the sunken valleys of the Marlborough Sounds where three quarters of NZ's Green Shell mussels and Ora King salmon are grown.

Through the Marlborough Food & Beverage Innovation cluster (mFBI) http://www.mrc.org.nz/marlborough-food-beverage-innovation-cluster/ we support further investment in primary production particularly by moving product up the value chain. Having a much wider basket of product is good for the region and New Zealand.

Marlborough's contribution to the nations GDP is over $2.3 billion (1% of NZ's GDP) and has surged since 2012 by over 16%. This is from a population base of only 45,300 people.

Members of the mFBI cluster recognise that they need to work together by forging strong partnership with the likes of Massey University, FoodHQ, the Marlborough District Council.

These partnerships are foundation blocks that sustain our ongoing collaboration and connectedness.

mFBI's mantra has been to explore technology together, tap into and utilise the best advice, seek out the most accurate reliable market information from consumers in their market place.

For example we have just completed the Premium Foods for China programme – involving honey, garlic, seafood and dairy; We placed a Market Development Manager in China in the consumer market place for 9 months out of 12 for a total investment of $200,000.

Referring to the WEA conference programme I note a strong emphasis on using technology to lift overall performance. Maximising energy utilisation, by-product waste management, using technology and support systems to full capacity.

By doing so there will be an economic gain plus a greener, holistic sustainability outcome that complies with the rules of the new Marlborough Environment Plan.

I endorse your collective approach to dealing with these matters at your conference.

As I mentioned earlier Marlborough's population is just over 45,000 people. We actually need help to reverse a nationally significant statistic that - 21% of the population is now over 65 years and this demographic is predicted to continue to increase.

51% of the population is aged 25 – 64 years. Projected population growth over the next ten years is just over 5% well behind our top of the south neighbours in Nelson and Tasman who are planning for around 12% population increase.

We are **the sunshine** capital of NZ. We have 1800km of coastline that includes the beautiful Marlborough Sounds - which is 17% of NZ's total coast and potentially one of the most lucrative coastal margins for aquaculture in the country.

For **Wine Tourism** the potential growth from high spending visitors seeking cultural, recreational experiences will include great local food and wine.

Back to our natural resources: -We have plenty of water but it needs to be captured and stored in times of abundance. We can store more and reticulate a lot more in future.

Water is accepted as being the new 'white gold'

Soils in the valleys are generally fertile though the difference between the Wairau and Awatere valleys is mainly temperature, water availability and soil type. For sustainable resource use the cap is now being applied on further vineyard development as most of the better land has been planted or about to be.

Looking ahead: - Flaxbourne area south of Seddon on the east coast of Marlborough is in the process of being prepared for a $27 million irrigation scheme of several thousand hectares.

We might well be reaching a natural cap in production for further vineyard development but as in the past we will have pioneers and risk takers prepared to plant in different places?

In 2007 NZW launched their sustainability programme. The policy required all NZ wines to be produced under independently audited environmental programmes. This programme is now the industry standard and importantly located at the MRC campus in Blenheim.

Likewise the council has been working for many years on a fairer allocation system for water to smooth the method of distribution, allocation to ensure sustainability of a primary resource.

In summer Marlborough is one of the hottest, driest regions in the country and most of the region's freshwater resources are fully allocated Mostly over allocated to consent holders but not actually fully used on a per cubic metre count?

There are 1300 water consent holders in the district who depend on water at peak irrigation times in the growing season. We need to address how to improve delivery and distribution of water.

Economic assessment places the regional value of water beyond one billion dollars.
More than ten thousand of our jobs relate to land use that depends on water.

In brief the key components to be seriously looked at are: the current full allocation of water resources, the efficiency of the allocation system, limits for all catchments, equitable access to water, the effects of groundwater takes on surface water,

and the problems created by water demand being at its height when river flows and aquifer levels are at their lowest.

Metering records suggest that many allocations made in the past were based on generic crop guidelines rather than specifically meeting a property's needs. So, particularly in the two shoulders of the irrigation season, allocation is often disproportionate to actual water requirements. Talking of water

It has been suggested through the councils recently notified resource management plan that changes to the current restrictions around the transfer of water from one consent holder to another has changed.

Enabling the quick, free sharing of water between consent holders without recourse to the consent process. This will free up water that has been allocated but is not required.

Because the Marlborough District Council is well advanced in its use of information technology, it would be possible to control this process with a Council-managed on-line system unencumbered by cost and regulation, enabling day-to-day short-term sharing.

For a winery 'reasonable use' is a consideration and is mitigated through well managed water use, recovery and reuse. It's expected that, by adjusting individual allocations to more accurately reflect real need, over time the issue of over-allocation of some aquifers surface water takes can be balanced.

For wineries located at Riverlands plugged into the oxidation ponds is hugely important for a large and growing part of the industry.

Those wineries not connected to the Council liquid waste treatment system are legally required to treat waste prior to discharge and in general this is a well-managed and monitored function of wine making.

But, there is still the growing mountain of grape marc that this region has yet to deal with in an environmentally sustainable way.

I want to finish by skirting around the mountain of grape Marc estimated to be 60,000 tonnes this season.

In 2014 eleven Marlborough wine companies were involved in an ambitious plan to collectively resolve how marc was disposed of. This project had a great start by bringing together industry, the Council, MRC and TARAC Technologies from Australia who successfully proposed a method for processing winery residuals.

The minimum volume to make it work was 30,000 tonnes of marc, 8000 tonnes of liquid residuals. The end product was alcohol and compost.

The programme was due to commence for vintage 2016. The key to success hung on industry uptake; and the need to buyback of reconstituted marc/compost. That was to be the sticking point.

The project fell short of its goal at that time because of the cost of buy back to the partner companies not being forthcoming overall.

I believed this was the solution and would have put the industry into a strong position for sustained compliant growth based on the best environmental practice for disposing of waste that met the regulatory requirements of the MEP.

This issue has not been put to bed and requires further industry support to resolve how grape marc is to be dealt with. If industry doesn't lead then regulations will.

As you will know V16 for Marlborough rattled the scales at 323,000 tonnes. TARAC Technologies could have been the answer particularly with the tonnage of fruit not harvested.

Many of the issues you are confronting and dealing with today and tomorrow at your conference will in a short space of time be standard operating procedures.

Knowing that history is a great teacher and a key reference point to measure progress, so too is the need to collaborate, share information, support new technology development, and invest in research and development as a standard part of your operating budget.

I wish you all an informative, enjoyable conference.

All the best
Noho ora mai