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To:	Mailroom Mailbox
Subject:	Submission on the water management plan
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Attachments:	Finding ways to farm for the future..rtf RECOMMENDATIONS.rtf

Hello Bill Bayfield,

We face a crisis. The government's plan to expand industrial dairy around the South Island is a failure.

Its new water quality standards put in place at 1 August 2014 is a failure. It was decried by many freshwater scientists.

Its strategy to deal with climate change is non existant. We have a government without vision.

Attached are two papers, one outlining my recommendations, and the other setting out a strategy for climate change.

Without change some farms will be sold to overseas buyers.

Regards

Terry Huggins
Geraldine.

Finding ways to farm for the future.

Farming is New Zealand's largest and most important industry with over half of our land mass given to primary production. Over recent decades evidence is mounting about the effects of people on climate change. Farming has been a major contributor. As the climate changes we need to form a strategy for farming that provides a path forward that is beneficial for the environment, for our nation, and is profitable for farmers.

Of New Zealand’s greenhouse gas emissions 30 percent come from methane produced by farm animals. Methane is a more damaging gas in the atmosphere than ordinary carbon dioxide (CO2), one kilogram of methane being equal to 11 kilograms of CO2. Farming also produces nitrous oxide, estimated at 18 percent of our emissions, a gas 280 times as potent in the atmosphere as CO2. This greenhouse gas is produced by chemical reactions on soils and excrement that have been heavily fertilized for crops and pastures.

Dead zones in coastal waters have become common worldwide alarming scientists. These zones are the result of runoff of nutrients from fertilizers after they are applied at sowing or by topdressing accumulating in river estuaries. Some of these zones are very large, the largest being at the mouth of the Mississippi which is 300 metres across.

The excess nutrients fertilize blooms of algae creating a chain reaction which absorbs the oxygen in the ocean depriving seafloor creatures and fish unless they move to unpolluted areas. We are already aware that many rivers and lakes in New Zealand are similarly affected by toxic algae blooms.

Over the last few decades, particularly in the Western world, there has been a huge proliferation in modern diseases such as obesity, diabetes, asthma, cancer, arthritis, heart disease and Alzheimer’s disease. In the USA doctor Floyd H. Chilton has spent over thirty years researching these diseases and published his findings in a book

Inflammation Nation which he published in 2005. In the book he outlines the imbalance in the American diet between omega-6 fatty acids and omega-3 fatty acids. He observes that Americans take 10 to 20 times the amount of omega-6 fatty acids in their diet to only one part omega-3 radically different to the American diet of a century ago.

Chilton also states in his book that in the 1970s, due to depleted wild fish stocks in rivers and lakes, fish farming was established. His research has shown that farmed fish mirrors modern intensive animal farming in that omega-6 increases and omega-3 decreases.

We need to ask ourselves the question: Is our heavily fertilized farm and poultry production creating an imbalance in our diet that is contributing to our increasing modern diseases?

The best source of omega-3 for humans is from fish, especially wild fish feeding on algae and seaweed which are full of omega-3. Already there are many forms of omega-3 made available in supplements such as fish oil and Krill oil.

Although there are good plant sources of omega-3 like borage oil and flaxseed oil, canola and soy products, these plant sources need to be converted by the body and it only converts about 10 percent efficiently. However it is still important to consume these plant sources in our diet. It is of vital importance for health that industrial farmed animal meat and dairy produce is consumed in moderation.

So in a farming strategy for the future we need a new perspective that recognises the value of naturally produced foods and it is also imperative to maintain clean unpolluted rivers and lakes and coastal areas. To meet climate change and to maintain clean water organic farming is far more sustainable as well as eliminating nitrous oxide from our greenhouse gas emissions. Topdressing on to pastures and crops in monoculture farming methods should be eliminated.

Organic farming is a powerful method of farming that lends itself to innovative farming methods and today many organic fertilizers and natural enrichment methods are available. Organic production is not

only more resilient it is likely to assist in the reduction of the epidemic of modern inflammatory diseases.

As climate change intensifies some diversification in farm production especially to environment friendly crops like tree crops and legumes will be beneficial. A broader range of produce will safeguard local communities in the event of shortages worldwide. Further production of olive oil, nuts, and the establishment of organic soybean farming could prove to be beneficial.

Given the high levels of methane emissions from cattle and sheep and other farm animals as well as water pollution it makes sense to limit the expansion of these forms of farming to allow some increase in less damaging crops particularly near vulnerable water systems.

It would be constructive for government to assist in the development of a sound farming strategy by one off grants for farmers to convert to organic production or in trialling of new types of production like soy.

RECOMMENDATIONS

My recommendations go beyond the Water and Nutrient management plan and provide a farming strategy for the whole of Canterbury. At present all types of farming, sheep and dairy in particular, face a battle to achieve viable returns on international markets.

The invasion of industrial dairy throughout Canterbury and its monopoly of our water was a huge mistake. Not only are there too many dairy farms but their practice of topdressing is an aberration in best farming methods that are also used in all forms of monoculture farming including market gardening.

Topdressing followed by irrigation not only pollutes rivers, lakes and aquifers it uses too much water. In addition nitrogen fertilizer contributes 18 per cent of New Zealand's greenhouse gas emissions as it interacts with soil and excrement. This practice is uneconomic and is the most unsustainable mode of farming to deal with climate change.

Due to a strategy by China to buy farms around the world and the worldwide increase in dairy production the returns for dairy are destined to remain low.

A new strategy is required for farming in our region to fight climate change, groundwater pollution and maximize farming profits. Some diversification should be encouraged into more environment friendly crops, such as tree crops, that don't require chemical fertilizer and retain clean groundwater.

In the United Nations Conference 2013 on Trade and Development 62 farm experts recommended that organic farming methods employ the most sustainable strategy to fight climate change. Innovative organic farming methods provide a flexibility that allows for rotation and the growing of supplementary cash crops. Pastures and crops grown organically require less irrigation water for success.

In a recent report in The Christchurch Press it gave the relative prices for organic dairy powder at $14,000 per tonne on the international market as opposed to $2,900 per tonne for conventional milk powder.

Recommendations

1. That as rainfall decreases that farming should employ the best farming methods to meet climate change.
2. That local District Councils in partnership with The Conservation Department develop a number of small tree plantations on marginal land including natives, shrubs for ground cover, and some nut or fruit trees. These woodlands to break up winds and draw moisture into the ground.
3. Water conservation and purity becomes the new priority as river flows decrease.