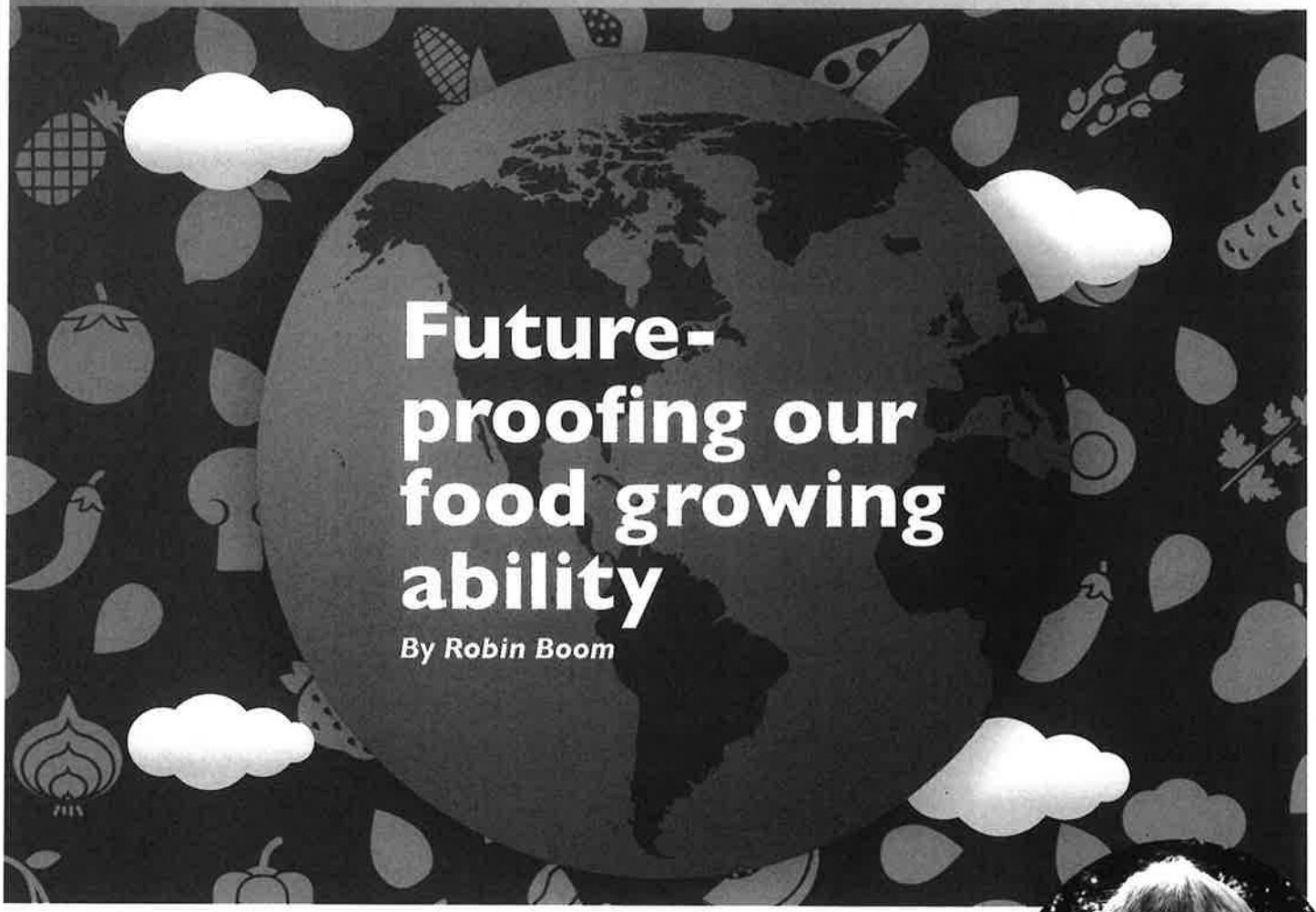

Future-proofing our food growing ability

By Robin Boom

Food production worldwide has grown by and large on a par with the increase in human population due to the implementation of modern agricultural practices, some of which have been environmentally destructive, and there is more and more pressure for farmers and growers to work their land more sustainably.

For the past fifty years New Zealand primary food production has been a kind of laissez faire industry, which has evolved to survive in the international marketplace unassisted by any government subsidies, competing in marketplaces where local tariffs disadvantage our products. The world has been awash with cheap food produced by large scale factory farms, often heavily subsidised, as governments are loath to see their citizens going hungry because food is too expensive to buy.

There is increased public pressure for food to be produced sustainably with minimal environmental impact on waterways and with lower greenhouse gas emissions. With the world human population expected to be approaching ten billion by 2050, being able to feed everybody while reducing environmental degradation is going to be problematic. If what climate change doomsayers are predicting is right and the world gets 2 or 3 degrees warmer than it is now, sea levels rise significantly and there are sustained continental and intercontinental droughts, then food and crop production to provide nutritious food for everybody could become severely challenging. Freshwater will be an ever-diminishing commodity, and many of the river deltas around the globe currently used for crop production such as the Mekong river delta in China where much of the world's rice production occurs, will be salted by rising tidal surges, causing salinity issues. Irrigation water in some countries currently relying on it will either dry up or become too saline for crops to grow. The result will be desertification of agricultural land on a grand scale.

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Thanks to our maritime climate, New Zealand will be somewhat immune to prolonged droughts, although with warmer temperatures, subtropical crop production will become more common in certain areas and we may see fruit such as pineapples, bananas and crops such as sugar cane being grown. New Zealand should be part of the solution for feeding a hungry world, but with the barrage of environmental compliance rules encroaching upon us, the potential for producing food is in danger of being hampered. If we consider irrigation for instance, currently over 98% of our freshwater from rainfall and snow melt going into our lakes and rivers eventually flows into the ocean. We are blessed with abundant amounts of water coming off our mountains and hills which if it can be stored will help future-proof crop production in dry periods. Proposed irrigation schemes however, are becoming more difficult to get over the line as government and regional councils acquiesce to pressure from environmentalists with concerns about nutrient enrichment of waterways and groundwater, particularly from nitrogen.

The recently proposed Climate Change Response (Zero Carbon) Amendment bill attracted over 10,000 submissions and the parliamentary select committee has listened to over 1,000 individuals or groups who wanted to make an oral presentation. The outcome of this bill if implemented as proposed, is likely to have severe ramifications for future land use and rural communities. Productive fertile land is likely to be earmarked for carbon farming, being planted in trees that are just left to take out carbon-dioxide from the atmosphere.

Currently the government is seeking responses to the Essential Freshwater regulatory discussion document *Action for Healthy Waterways* which is also likely to severely impact intensive agriculture and horticulture. Nitrogen caps in various regions based on Nitrogen Reference Points produced by the Overseer model will limit further intensification, and vegetable growers in particular could be forced to accept lower yields as a consequence of reduced fertiliser inputs, and expanding into environmentally sensitive catchments, even when the climate and soils are suitable for intensive horticulture, will become difficult.

If new irrigation schemes were given a green light, pressure will be on for the land to be used for crops or livestock with the lowest environmental footprint, or to embrace what some call regenerative farming or restorative farming techniques. Fruit tree and vine crops with drip-fed irrigation are likely to become more common as their environmental footprint is often a lot lower than green vegetable and root crops, and also lower than intensive livestock operations.

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One thing that seems certain is that there are going to be big changes in the way land is managed here in New Zealand, and with increased regulation, costs of production are likely to go up. While the public is demanding greater environmental compliance, less food production will increase demand, and hopefully growers will receive a fairer price from what consumers are prepared to pay. How all of these dynamics will play out in the next thirty years will be interesting. The way to increase food production to feed an extra three billion people on our planet is not to hamstring the productive capacity of good soils with burdensome regulatory compliance in my opinion.

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