

Downsizing to upsize the local grain economy

Local grain economy

Why: To discuss whether small-scale regional milling could help arable farmers enter local food chains and give bakers more locally-grown and niche grain options.

Where: Bakers, arable growers and small-to-medium sized business owners with an interest in organic and regenerative practices, in multiple locations around the country.

Who: Angela Clifford (Eat New Zealand), Heidi McLeod (PhD candidate, Lincoln University), Hamish Glendinning and Simon White (Ludlow & Woodbrook Farms).

What:

- Wheat cleaning and milling infrastructure is required in both the North and South Islands to ensure food security. Whether this is on-farm or in-bakery is not significant. A regional overview of the number of on-farm mills is needed so farmers can work collectively, rather than in competition, ensuring viability.
- Interviews with regional businesses revealed beliefs that directly connecting with customers leads to initiatives that deliver positive environmental, social and cultural results.
- Bakers and farmers interviewed indicated that they often do not have good business information from millers to base decision-making on. Relationships and trust are variable along the supply chain.
- This research suggests that enabling producers to take responsibility for small-scale processing could help distribute more value to farmers and grow the local grain economy.

More: ourlandandwater.nz/outputs/local-grain-economy

About 70% of the wheat used for flour in baking in New Zealand is imported, then processed in a few large mills. High transport costs to move South Island-grown wheat to the North Island make it hard for our arable farmers to compete. Could smaller-scale regional milling be the answer?

Milling on-site has become part of OMGoodness Bakery and Mill's brand identity, and has enabled them to produce unique bakery goods such as New Zealand-grown buckwheat bread. Its bakeries in the Hawke's Bay and Auckland produce organic, gluten-free, dairy-free, refined sugar-free, paleo and vegan bread and bakery products.

Further south, a farming couple in Canterbury began growing buckwheat as part of their rotation and invested in an on-farm mill, Pure New Zealand Buckwheat. Two other local farmers have since come onboard, and as a collective they have significantly increased payments for their grain, making the 100-day crop a viable rotation in their mixed farm business.

Small-scale production like these examples was once the norm in Aotearoa New Zealand. Until 30 years ago New Zealand was self-sufficient in milling wheat, with most grown in arable farming areas on the Canterbury Plains.

Global context

Deregulation of the industry in 1987 eased import restrictions, which introduced competition between local growers and farmers growing on the vast plains in Australia, where most of our milling grain now comes from. It became cheaper to import Australian milling wheat through the ports of Auckland, Tauranga, Wellington and Christchurch to the



big processing mills close by than to buy locally grown grain.

Globally, flour for baking has become a commodity product and is largely fungible, regardless of where it is grown, and one batch of milling flour is much like another. This makes good sense for large-scale bakery operations, including supermarkets who want to be sure their recipes will produce goods (especially breads) that look the same, take the same amount of time to bake, and produce the same amount in each batch.

Angela Clifford, chief executive of Eat New Zealand, a group committed to connecting people to our land through our food, sees this as limiting our resilience in food production. “As long as we continue to fit in this commoditised space, we are open to the vagaries of the global market,” she says.

Opportunities and issues

With funding from Our Land and Water’s Rural Professionals Fund, Clifford and her team investigated current literature and industry practice, and interviewed bakers, growers and other regional business owners in the group’s orbit about limitations and opportunities for arable farming of milling grains. They then put together an opinion piece on whether there was an appetite for smaller-scale milling of locally grown grain in the regions.

Most grain grown locally is used for animal feed, although there is room to also grow all our milling flour in this country, including by reducing livestock numbers and increasing on-farm diversity.

With most arable farming in the South Island, getting grain across Cook Strait to the mills near the bigger northern populations where most of the bakeries are is a serious issue, especially if you’re growing a limited amount of specialist grain. With the large mills operating 24 hours a day, seven days a week, supplying supermarkets and other large bakery outlets, they don’t have the capacity or ability to process small batches of grain. See **Figure 1** for a list of major commercial mills and smaller mills.

There are similar issues in the meat processing industry, where most processing is done in a few large-scale facilities, with much of the meat being exported. This has significant drawbacks for organic or heritage breed farmers who struggle to get their animals processed in smaller batches and want their meat returned.

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sufficient in milling wheat.**

Adding value with points of difference

The project sought insight from food producers in other sectors who are creating innovative ways to shorten supply chains to their customers. These small producers supply a niche market with product that has well-articulated points of difference, enabling them to seek competitive returns.

Food system innovator Glen Herud created milk processing and delivery company Happy Cow Milk to allow farmers to sell their milk in their communities. This involved designing new processes and equipment to meet the requirements of the Ministry for Primary Industries. Key selling points for the milk include its local production and animal welfare standards that keep calves with their mother.

Another innovator, fisher Nate Smith, created the Gravity Fishing 'pod' and app to connect fishers to customers for ordering and delivery, enabling fishers to process kai moana quickly and distribute it with certification and compliance handled through the app. A key point of difference for customers is the assurance that fishers use a hook and line, then kill the fish using the humane Japanese method ikijime.

For grain growers, country-of-origin labelling on food products is thought to be a selling point with the potential to add value to New Zealand-grown grain. Country-of-origin labelling is not required on bread, but a recent study by the Foundation for Arable Research found most people surveyed would prefer New Zealand-grown grain in bread. Half of those surveyed said they would pay around \$0.55 more for a loaf with organic, environmental and health claims, while 35% would pay similar for a loaf with biodiversity and health claims.

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Figure 1: Major commercial and independent flour mills in New Zealand



Mill at OMGoodness Bakery in Hawke's Bay.
Photo: Heidi McLeod

The research team approached a baker in Auckland, Hawke's Bay, Wellington and Christchurch for their views. Comments from individual bakers indicated they were skeptical that people would pay more for New Zealand grains, and felt they were more interested in whether the bread or other products were baked in-store.

Quality and consistency of supply seem to be the biggest issues for the bakers who do use locally grown flour, with a need to shop around for suppliers. The higher cost of regionally sourced flour saw one baker blending with other New Zealand flours to keep costs down. One baker said after 10 years of trying to get hold of enough local organic flour regularly, they had now changed to regeneratively grown flour from Australia.

On-site milling appealed to some bakers, but it wasn't considered feasible for smaller high-rent premises, particularly in Auckland.

Benefits of locally grown grains

Small-scale arable farming close to big population centres would reduce transport costs and could give small-to-medium sized bakers the ability to request specific grains to help differentiate their businesses. The bakers reported increasing customer interest in organic and gluten-free grains.

Countrywide, this could see smaller cleaning and milling facilities set up regionally, possibly as part of an existing farm business where the costs of infrastructure could be more easily absorbed. Alternatively, they could be run as a co-operative on a member's farm, as with Pure New Zealand Buckwheat.

Another Canterbury arable and livestock farmer, Martin Spear, began trialling different grain crops after he became interested in 'ancient grains', and now mills them on-farm under the brand Minchins Milling.

Farmers Mill at Washdyke in Timaru, which opened its doors a decade ago as the first new mill in 25 years, is a larger-scale example. Unlike the bigger mills, Farmers Mill is grower-owned and operated and only mills New Zealand-grown grain. It gave local growers in South Canterbury the ability to mill their grain without prohibitive long-distance transport costs.

Along with smaller-scale milling, a push to raise awareness and the value of local flour is also needed, says Clifford. Farming practices (such as organically or regeneratively grown grains, if appropriate), and the type of milling (such as stone-milled), could also become part of a local flour's identity. Including locally produced grains in a food 'identity story' like that seen on wine labels or at farmers' markets would help convey their provenance. This could potentially encourage local bakers to pay more for them to produce authentically local goods.

With more emphasis on reducing livestock farming's emissions footprint, Clifford sees an opportunity for livestock farmers to diversify into lower emissions arable farming and, weather permitting, for arable farmers to contribute to local food chains rather than just to animal feed stocks. This would play a part in building a local food grain economy and making the country more resilient to overseas disruptions along the way.

"I want our farmers to imagine there is a different way – that there is a space to be small, and that this doesn't have to be all of their farming business," says Clifford.

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Delwyn Dickey for the Our Land and Water National Science Challenge