Sustainable is Attainable
South Canterbury & Hawke's Bay

Creating solutions through collaboration

What is Sustainable is Attainable?

South Canterbury is home to the largest & most diverse range of Food Processors and Manufacturers (FP&M), in a geographically close location, than anywhere else in New Zealand.

This group of 20+ FP&M's (detailed below) were facilitated by Venture Timaru to come together to form the collaborative **Sustainable is Attainable** (SiA) initiative in late 2019. Food processing and manufacturing is the largest industry sector in South Canterbury and annually accounts for nearly $2.5bn of exports. Existing and new players are attracted to the region because of its central South Island location, availability of high-quality water, access to the national and international markets via a thriving Port and close proximity to raw product. The sector is extremely diverse and produces everything from vegetables, fish, dairy, and meat through to honey, beer, vegetable juice and pet food.

The goal of Sustainable is Attainable is to collaboratively explore and develop viable alternatives for the waste & by-products generated during food processing and manufacturing. This includes investigations and progression of solutions across value extraction, circular economy, new product, and waste minimisation opportunities.

This is achieved through extensive collaboration and sharing across the local businesses - with Venture Timaru as facilitator and Canterbury University's Biomolecular Interaction Centre acting as the conduit into the nationwide network of universities and research & development organisations. The process involved data collection, refinement and sampling, assessment, identification, and progression of identified solutions.

As the group stepped through the initial collation of waste and by-product data, with the valued assistance of university students (funded by Callaghan Innovation R&D Student Experience Grants) who completed onsite visits and sampling, two main areas of focus emerged – biowastes and plastics. These were chosen because they presented the most common challenges across the businesses. It was also recognised that any solutions developed for these particular problems could be translated to other regions of New Zealand.

Points of note:

- Unprecedented collaboration - this is the first time such a large and diverse group of companies within an industry sector has extensively collaborated on anything let alone an issue of such importance was waste and by-product minimisation and management.
- National & International - in addition to involvement and input from national companies in-house sustainability groups i.e., Fonterra, Sanford etc… there is also active engagement with international sustainability leads from global companies such as McCain and DB Heineken.
- Replicated - in August 2021, the Hawke's Bay was the second region of New Zealand to launch Sustainable is Attainable and there has been recent engagement with other regions to also join the fold.

"Don't let an opportunity go to waste"

Who's involved?

South Canterbury-based food processing and manufacturing businesses:

Nationwide universities, research & development organisations and engaged entities:

Alignment also to:

- Unitec Institute of Technology Environmental Solutions Research Centre
- Office of the Prime Minister's Chief Science Advisor's – helping inform the recently published "Food waste: A global and local problem"
- Various Government Agencies – NZTE, MPI and MFE
- Kai Commitment

Process so far?

Stage 1: Voicing the problem

At a get together of our local FP&M's a few years back one of them stated:

"I don't know about you all, but I'm focussed so much on getting my raw's off the tree or out of the ground, processing and marketing the finished product nationally and globally – I don't know for sure, but I think I'm doing Ok with my waste and by-products but:

a) *I don't know if my a plus your b and your c equals something of value i.e., a new product*
b) *I'm also hearing some things I should be doing with my waste/by-products but just don't have the resources/time/money to progress".*

There was then general consensus around the table that all were in a similar position and most importantly were motivated to collaboratively work together on this issue. Sustainable is Attainable was born!!

Stage 2: Setting the foundations and understanding the scale and opportunities

Venture Timaru collated and databased waste/by-product information from individual companies – subsequently shared with academics and R&D institutions:

- What is it?
- Composition
- Volume
- Seasonality
- What are you currently doing with it? – dumping/selling etc.
- What have we heard of that we could do with it?

This database has continued to be refined and added to and has formed an unprecedented library of information for the academic and R&D entities to review and assess but importantly align and feed into existing workstreams being undertaken nationally. This database is currently being updated.

Summary:

As the developer and now facilitator of the Sustainable is Attainable Initiative, we at Venture Timaru are thrilled to be involved with such an unprecedented and substantial collaboration within one of NZ"s leading industry sectors. A unique collaboration which importantly involves members who are genuinely motivated to make positive change for the betterment of the environment in which they operate.

As a collaboration that will bring significant economic, social, and environmental benefits to our sub-region, the recent commencement of the Energy Efficiency and Conservation Authority Regional Energy Transition Accelerator programme will also greatly accelerate the realisation of aligned benefits across priority areas of decarbonisation, sustainable energy, and circular economy.

The expansion of SiA into the Hawkes Bay, and current interest from other areas, speaks volumes to the robustness and replicability of the SiA collaboration – one that has established proof of concept right here in South Canterbury.

Overview of Key Findings:

Biological wastes

The below table outlines the 17 biological waste (biowaste) streams produced by the cluster of businesses. This includes eight streams which are common across multiple business such as food waste, general animal waste, oil, and sludge. A minority of the biowaste streams go directly to landfill with the majority used on farms, sold on directly to end-users or sold to other organisations who develop new products, including stock feed.

Tonne/year	Biowaste	Destination
Highest	Spent brewer's yeast	Stock food
	Potato waste	Stock food
	Broll	Stock food
	Expired or rejected Product waste	Stock food
	Solid plant biowaste	Compost, stock food
	General animal waste	Envirowaste; on and off-site rendering; blood and bone fertiliser.
	UHT	
	Oil	Stock food
	Spent brewer's grain	Stock food
	Fish offal	Fish food
Lowest	Starch (liquid and semi-dry forms)	Stock food
Data unavailable	Malt dust	Stock food
	Manure	Envirowaste
	Sludge	Spread on farmland; discharged into sea; sold to farmers
	Animal skins	Envirowaste
	Fatty acid	Sold overseas for soaps or to a local tallow company
	Whey	Fertiliser; whey powder

Non-biological wastes

Table 1 highlights 13 common materials which the cluster send to landfill. All businesses in the cluster contribute personal protective equipment (PPE) to landfill, including gumboots, nitrile gloves and hairnets. These are contaminated with perspiration and food. Quantifying the amount of hard, non-biological waste going to landfill was challenging as not all businesses record this information. Almost all of the businesses find soft plastics, of varying composition, problematic. This includes both waste produced onsite, sent to recycling facilities, and sent offshore to retailers and consumers. Clean, soft plastics waste is either bailed onsite or collected and recycled while contaminated soft plastics is sent to landfill.

Table 2 outlines dirt-based waste streams which can be challenging for the businesses to manage.

Table 1 - Common materials sent to landfill by the SiA cluster.

Material	Contaminant
Blue Bags/Sheets Food Grade -PE	Fruit, produce, powders
Pallet Strapping -PET	None
BATA Gumboots – mixed composition	Food, sweat
Aprons – mixed plastic, including PPE	Various, animal blood, fruit, vegetables etc.
1 ton Sugar/Lactose Bags	None (Liners Removed)
Hairnets/Beard nets – mixed plastic, including PPE	Perspiration
Nitrile Gloves – PPE	Perspiration
Vacuum Pack Offcuts	None
Label Backing	None
Paper Bags	None
Filter Socks	Milk Powder Residue
UHT Multilayer Packaging	UHT Milk or None
Keg Seals	None

Table 2 - Other notable waste streams identified by the SiA cluster.

Material	Destination
Dirt, stone	Dirt applied to paddock on property & stones sent to landscaping companies, council, or farms
Diatomaceous earth	Council
Bleached earth	Landfill

For more information please contact

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Refer : Sustainable is Attainable