



MASSEY UNIVERSITY
COLLEGE OF SCIENCES
TE WĀHANGA PŪTAIAO

Submission to Te Ara Paerangi Future Pathways
School of Food and Advanced Technology, Massey University
Palmerston North

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At Massey University, the School of Food and Advanced Technology encompasses the **FoodPilot**. It is a centre of national significance as explained below and comes within the remit of the [MBIE Strategic Science Investment Fund](#) which funds “*research programmes and scientific infrastructure that have long-term beneficial impact on New Zealand’s health, economy, environment and society.*” Examples of currently funded infrastructure are the Australian Synchrotron, Genomics Aotearoa and the Research Vessel Tangaroa. The **FoodPilot** is also infrastructure, which being equipment centric has high CAPEX and OPEX costs. Currently, it struggles for operational funding to keep it open for engagement with the food sectors of New Zealand. A better funding model is needed.

The following points outline the evidence.

- The **School of Food and Advanced Technology** (SF&AT) at Massey University together with the **FoodPilot** is in the unique position of being the major New Zealand provider to the food industry of education, research and development (i.e., through product and process development).
- Pivotal to this provision is the embedded **FoodPilot**, the food processing pilot plant and associated laboratories.
- **FoodPilot** allows companies to develop new production methods, new formulations, make trial production runs to test market, and host research projects. It also provides a training facility, and through the degree programmes to train students in state-of-art processing.
- **SF&AT** and it’s **FoodPilot** are deeply integrated with other food R&D providers, including being part of the **Food Innovation Network**, and closely working with the CRIs of **Plant and Food Research** and **AgResearch** (who have restructured nationally to move their laboratory to be immediately adjacent to FoodPilot), the **Riddet Institute** where a number of staff share joint positions, the **Fonterra Research Institute** nearby, and the research division of **Synlait**, housed onsite. A significant amount of contract work is also done for **Zespri**.
- **FoodHQ**, run by Dr Abby Thompson, represents the regional cluster of research providers and has been active in trying to secure government funding for economic development.
- Extensive research is conducted in SF&AT in applied areas of immediate benefit to the food industry, e.g., packaging which is crucial to the safe export of products, post harvest shelf life extension and environmental engineering on food processing residues. The school also works in; agritech to develop new devices and tools for the agricultural sector, nutrition and petfood, and robotics and imaging, all of which are important to the food economy. SF&AT also hosted

the recently completed **MBIE Research Programme**, FIET (\$16.65M), which extensively used the **FoodPilot** to develop new, or new to New Zealand, food processing equipment.

- In many ways, the above describes a **centre of national significance**.
- However, providing the facilities to conduct equipment-intensive R&D is expensive in both CAPEX and OPEX.
- In 2009 Professor Richard Archer negotiated an injection of \$2.7M was received from government sources (MBIE) for CAPEX to provide upgrading of the existing pilot plant facilities. We estimate that now full replacement would cost somewhere between \$12-15M.
- Alongside that came a small OPEX contribution which is currently \$80k per annum, now received through the **NZ Food Innovation Network**. NZFIN consists of four food industry pilot plants, with the other three (FoodBowl, Food Waikato and Food South) being run by **Callaghan Innovation**. The other three are economic development orientated, doing small scale production runs for companies, where feedback comes through the market.
- The **FoodPilot** at Massey University is quite different, providing three functions: **education, science and economic development**. Feedback to companies also comes through a mix of science results, pilot plant trials, sensory studies and market feedback.
- The current OPEX requirement is \$900k-\$1M per annum.
- However, **funding of OPEX funding is not balanced to the three functions of education, science and economic development**. Almost all comes from the TEC through the internal funding (i.e., education) to Massey University, which has been shouldered with the responsibility for all functions of the **FoodPilot**. This puts pressure on the university finances, which translates to the college and to the school. To meet budgetary constraints, staff numbers have been reduced.
- In reality, with the current New Zealand model, funding should be partly from TEC (education), RS&T (science) and MBIE (economic development). However, no RS&T or MBIE funding is received.
- What is needed is long-term decadal underpinning funding to maintain state-of-art CAPEX and some core OPEX for the FoodPilot. It is not appropriate to be relying on organisations that have short-term project-based funding (e.g., the Riddet CoRE, the CRIs) to supply money, when they themselves do not secure long-term funding.
- Therefore, a strong argument exists to secure long-term underpinning funding through one mechanism, such as a RS&T budget provision. In this way, **FoodPilot** as a **centre of national significance**, will be able to ensure essential operational tasks.

Having such a core funding for CAPEX upgrades to incorporate new equipment advances in food processing and OPEX will mean the FoodPilot will be technically ready and have the people to engage with the food companies that are coming to us for R&D. In this way, the FoodPilot will be properly provisioned to enhance the three prongs of education, science and economic development to the food sectors of New Zealand.