A value-based approach to investment in the food and fibre sector

A note sharing findings from the Raising Aspirations project – October 2025

Introduction

Many of those involved with vocational training in the food and fibre sector think that we are missing a trick. They hypothesise that there are training programmes which offer high returns to industry yet are not affordable for training providers to run because volumes are too low. Instead, funding rules incentivise providers to deliver high volume, but potentially lower value, programmes instead. How do we know if this hypothesis is correct?

If we had a way to quantify the benefits that individual training programmes provide, and to weigh up the relative value of those benefits given the different priorities of stakeholders to whom those benefits accrue, and if we knew the cost to deliver different training programmes, we would be in a much better position to direct investment towards the training provision that offers the best returns to industry, learners and the country.

This paper is predicated on a belief that analysis of the value of the outcomes created by different training programmes should be part of the conversation whenever investment decisions are being made – whether that be in an ISB's advice to TEC, in training providers' investment plans, or employers deciding whether to put their employees through training. None of the stakeholders that we talked to for this work disagreed that this would be an improvement on the status quo. The issue is how to do it. The Raising Aspirations project, led by Scarlatti and supported by the Food and Fibre CoVE, aimed to make a start on this.

The project explored what we will call in this paper a *value-based approach to investment*. It prototyped an approach to estimate the impact of training based on the value created by two outcomes:

1. Increased profits made by food and fibre businesses
2. Change in learners' lifetime earnings

The work has developed a prototype tool, and generated some preliminary results that we describe in this paper.

A value-based approach to investment

By 'taking a value-based approach to investment' we mean using a systematic approach to identify outcomes of interest, estimating the effect that training has on these outcomes, and allocating investment accordingly. Specifically, the steps we envisage are:

- Identify outcomes of interest. While we have only considered economic outcomes in this work, outcomes should eventually also include social and environmental benefits given the impact of these on a region's - or even the nation's - overall wellbeing.
- Estimate the impact that a training programme has on each outcome using a standard set of analysis tools.
- Weight the importance of changing different outcomes to arrive at an overall weighted benefit.

- Use the total benefit and cost to calculate a benefit to cost ratio.
- Use this information to guide what training receives investment and what does not.

If we had a value-based approach to investment, we could:

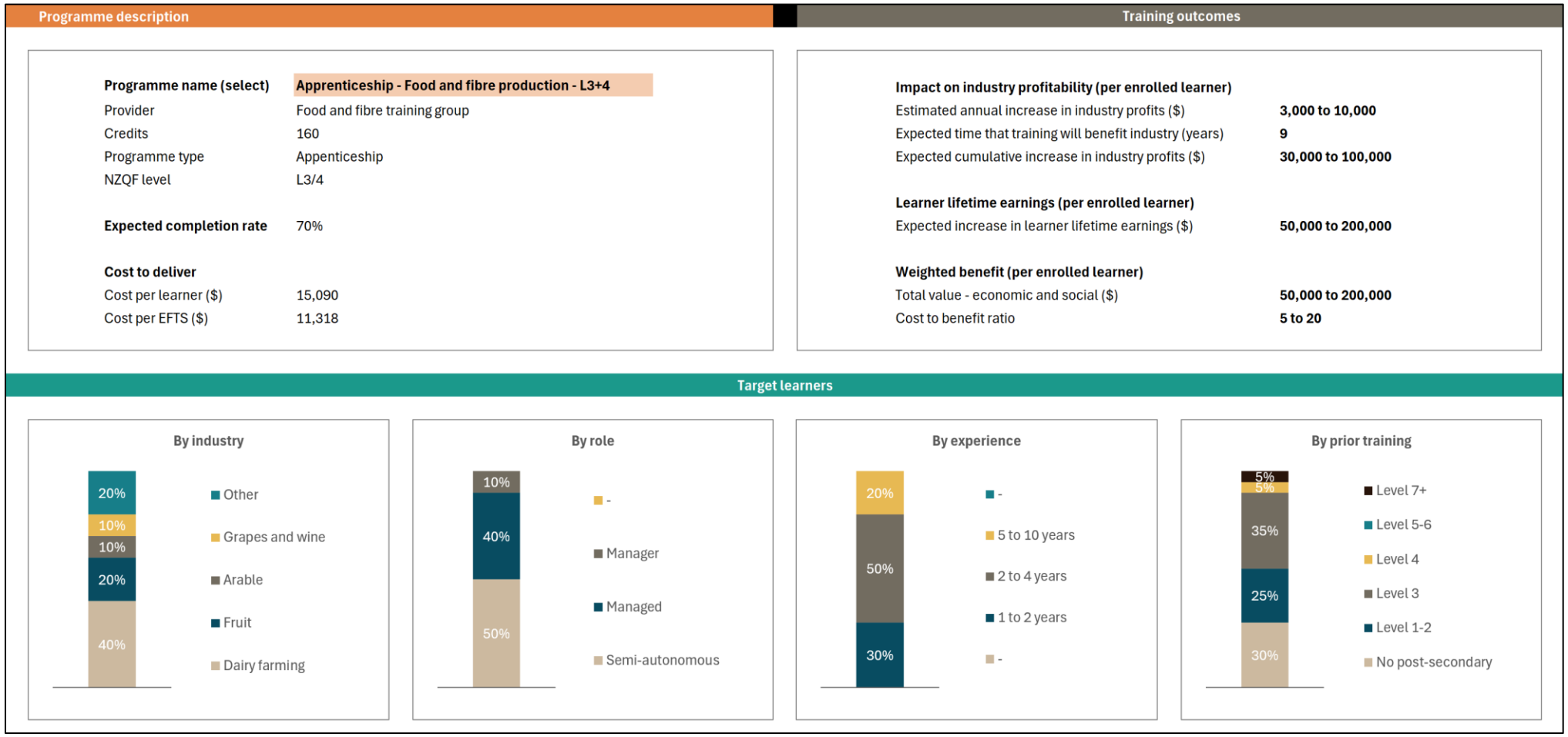
- Invest in training that offers the highest overall return and make the most of the investment available in a fiscally constrained environment.
- Have informed discussions about what the drivers of value are and move provision in that direction.
- Be confident in selling the training programme to employers and learners.
- Inform the discussion about 'who pays?' What share of the costs of training should be paid by government, industry collectively (via a levy), individual employers, and learners.

Our project

The Raising Aspirations project has made a start on building the tools needed to make a value-based approach to investment possible. We built prototypes of:

- An economic model to characterise the impact of training on business profits.
- An economic model to characterise the impact of training on learner lifetime earnings (which could also be seen as a proxy for some of the social benefits of training for a learner)
- A spreadsheet-based tool that:
  - Incorporates the two economic models.
  - Weights changes in the two outcomes allowing for different stakeholder perspectives to be taken into account.
  - Estimates the costs to delivery training programme based on attributes like class size and delivery type (c.f. their funding rates).
  - Runs a series of illustrative training programmes through the tool to estimate their benefit to cost ratio.
  - Presents results in a dashboard – see example in Figure 1.

Figure 1: A screenshot of the dashboard showing the costs and returns from an example training programme



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We highlight that these outputs are prototypes only. They could be improved in a range of ways, for example, refinement and peer review of the model logic, better calibration data and inclusion of a greater range of outcomes. We could also address an important exclusion from the current model – training programmes that address capability indirectly by, for example, upskilling farm advisors.

Nevertheless, we think that the preliminary results are useful enough to start a discussion about where training investment should focus. The reason we say this is that any errors in the model are likely to be broadly consistent and mean that relativity is maintained between the analysis of different training courses. Therefore, the tool allows us to make comparisons between training programmes and explore how sensitive the results are to different training attributes, even if the absolute numbers need to be treated with caution.

Findings

Training is an excellent investment

While we find that the return from training varies a lot, the foremost finding is that the returns from training in the food and fibre sector are high across the board. Even comparatively low returning programmes deliver 'lifetime' economic benefits 3-10x the cost of delivery. The highest returning programmes may offer economic benefits up to 100-300x the cost of delivery.

If this level of return seems implausible, it may be worth highlighting one piece of industry data used to calibrate the modelling. An average-sized dairy farm in the top 20% by profitability is over $500,000 per year more profitable than one in the bottom 20%, and human capability is almost certainly the largest cause of this difference. This suggests that moving a farm owner or manager along a distribution of capability, by even a small amount, can result in a multi-year impact on profitability measured in the tens to hundreds of thousands of dollars. This in turn means that, for example, a micro-credential that builds key dairy farm management skills and costs only, say $3,000 to deliver, can have a dramatic return.

Returns vary widely

To explore the variation in returns between training programmes, we compare six hypothetical programmes defined using a range of attributes:

- Training type (micro-credential, apprenticeship, certificate…)
- NZQF level
- Target audience (industry, role level, experience, prior qualifications)
- Duration
- Delivery mode(s)

The results of the analysis are shown in

Figure 2.

Figure 2: A comparison of the benefits, costs and benefit-to-cost ratio of six hypothetical food and fibre training programmes.

Programme	Expected cumulative increase in industry profits ($ per learner)	Expected increase in learner lifetime earnings ($ per learner)	Total cost of delivery ($ per learner)	Benefit to cost ratio
Microcredential - Agribusiness budgeting - L5	200,000 to 500,000	30,000 to 100,000	2,459	100 to 300
Microcredential - Stepping into self-employment - L5	100,000 to 300,000	30,000 to 100,000	2,411	50 to 200
Microcredential - Farm production fundamentals - L3	10,000 to 30,000	30,000 to 100,000	3,890	10 to 30
Certificate - Farm skills - L3	5,000 to 20,000	30,000 to 100,000	3,157	10 to 30
Apprenticeship - Food and fibre production - L3+4	30,000 to 100,000	50,000 to 200,000	15,090	5 to 20
Certificate - Introduction to farming - L2	10,000 to 30,000	30,000 to 100,000	8,214	3 to 10

The rightmost column in the table illustrates the wide range in benefit to cost ratio. Our hypothetical *Microcredential - Agribusiness budgeting - L5* provides a good example of the high-value, low volume programme described in the introduction of this paper. Even if our modelling is wrong by a factor of 10x (which we think unlikely) it would be worth investing in the programme not just to deliver the training but also to fund additional promotion to attract more participants or to allow for smaller cohorts than would typically be viable for the provider. At the other end of the spectrum, our hypothetical *Certificate - Introduction to farming - L2* would need to see a step change in learner tenure in the industry following training, or to deliver other benefits not currently included in our modelling, to make it an attractive target for investment.

More development of the modelling and tool will be needed to firm up the conclusions, but these preliminary results lend weight to the hypothesis that there are training programmes, both on the shelf and that could be developed, that offer very high returns but that cannot currently be delivered affordability.

Recommendations

We recommend that:

1. Analysis of the value of the outcomes created by different training programmes should be part of the conversation whenever investment decisions are being made – whether that be in an ISB's advice to TEC, in training providers' investment plans, or employers deciding whether to put their employees through training.
2. That the Food and Fibre ISB pilots this approach in its advice to TEC from 2026 onwards.
3. That the stakeholders of vocational education in the food and fibre sector – including the ISB, TEC, providers and industry bodies – look for opportunities to improve the models in the tool, expand the range of outcomes that can be considered in the analysis, and further develop the tool to enable usability by a wider group of stakeholders.