Final report

Adopting a Results Chain Analysis Framework to Assess and Monitor MLA Product & Packaging Projects

Project code: MLA Product and Packaging Y21 Program evaluation V.RMH.0121

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Abstract

The project seeks an alternative method for Meat and Livestock Australia to evaluate requests for research and development funding and assess likely impact on returns to the red meat industry. Standard approaches such as Cost Benefit Analysis and Return on Investment do not always capture the full range of direct and indirect impacts that can arise.

The team reviewed recent frameworks used by MLA to assess project outcomes. It looked for alternative evaluation methods that could work on different project concepts, mindful that measurement outcomes must link effectively with MLA's equilibrium model.

Recent investments were examined to understand different variables in play. The study team then developed a framework based on an existing methodology which is used in evaluation of donor funding. A test case was made using this methodology. The results were encouraging because impacts for industry became easier to quantify and others were identified that were not immediately apparent.

The benefits to industry flow from an improved framework that enables MLA to make more informed decisions about the likely scale of financial and other impacts in funding a project.

Executive summary

This Report is for Project V.RMH.0121, MLA Product and Packaging Y21 Program Evaluation.

Meat and Livestock Australia sought an alternative framework to evaluate requests for research and development funding and to assess the likely impacts on the red meat industry. Standard evaluation methods like Return on Investment and Cost Benefit Analysis do not always capture outcomes, particularly non-financial outcomes, but which still nevertheless can affect the red meat value chain and ancillary areas.

The study started in March 2021 by reviewing previous evaluation frameworks and identifying some potential gaps that might not give a full indication to MLA of project outcomes and benefits. For example, there can be environmental impacts not captured by standard evaluation frameworks. It was also important that the framework's measurement outcomes could link effectively with MLA's Equilibrium Model.

MLA's R&D funding portfolio encompasses a wide range of funding requests such as retail products; value adding of by-products; and sophisticated processes like freeze drying. The evaluation framework must be able to cope with many different product concepts and processes. The framework must also enable side-by-side comparison to evaluate best returns for the industry. The framework, while instigated by MLA, should also be transparent for research partners' use and development.

An evaluation framework based on Theory of Change was identified: it is well-accepted in the administration and evaluation of donor funding in developing economies. Called a Results Chain Analysis (RCA), this framework can capture many variables and assign financial and other values to them, particularly cost and price estimates. In this way, MLA can make estimates of likely benefits to the red meat industry, not just to the research partner's viability. The RCA framework was developed to encompass numerous inputs, such as raw material costs, packaging costs, marketing costs; and to also identify outcomes from the investment. There is a sensitivity analysis available through this tool whereby different factors can be adjusted and different scenarios studied e.g. likely impact on industry in increased global demand.

The framework used some recent research and development projects to conduct a 'test drive' of the methodology and the results were favourable because they enabled the research partner to have more input than simply materials and overheads costs. Giving research partners greater responsibility for the provision of considered, accurate insights into the project and the business case should provide MLA with better evaluation outcomes. To help with this aspect, the study includes a set of Guidelines for the use of the RCA model. This will assist them to better understand decision-making considerations for MLA's research funding. It will also facilitate comparison of different research projects that are based on different parts of the value chain whereas that was previously difficult to achieve.

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1. Background

1.1 Project Evaluation Methodology

Meat and Livestock Australia (MLA) had recently completed a project to develop a framework to review all MLA investments (projects) made in the 2015-2019 period within MLA's Product and Packaging program. The framework was intended to provide an estimate of red meat industry benefit from these investments (Project - V.RMH.0088).

The framework that was developed under Project - V.RMH.0088 focussed on conducting Cost Benefit Analyses (CBAs) on a variety of projects in order to assess the relative contributions of each project towards meeting MLA's research and development (R&D) objectives.

It was decided by the Product and Packaging program team that, while the V.RMH.0088 methodology was rigorous, assuming assumptions were robust, it risked missing a range of potential project impacts.

This Project (V.RMH.0121) was commissioned to consider alternative project evaluation methodologies that would be able to capture a full range of direct and indirect impacts that flow from MLA-commissioned R&D projects.

With the next five--year cycle soon to commence as per MISP2030, this project provides a measurement and evaluation framework beyond individual project CBAs that can be applied to assess attributable outcomes and impacts of the new products and packaging projects stream.

It is intended that the proposed monitoring and evaluation framework be developed by innovation providers for each R&D project with the assistance of the MLA Project Team. The framework should be developed early in the project development cycle, thereby allowing assumptions to be updated and potential project outcomes re-evaluated. An important feature of the alternative measurement and evaluation framework is that it identifies outputs that are not captured in a standard CBA but which can be of considerable importance to ancillary businesses and sectors apart from the investment being evaluated.

2. Objectives

The objectives defined for the project were to:

- Build and deliver an evaluation framework for the 2020 Product and Packaging MLA program, reviewing past assumptions related back to 2015 and future predictions into 2025.
- Provide outputs that build on the baseline calculations from V.RMH.0088 and feedback from MLA and CIE in 2019 regarding project ROI and attribution methodology of GMI/IF based modelling.
- Design a framework for Y20/21 MLA Product and Packaging program that encompasses MISP2030 strategy imperatives as they evolve during 2020 as directed by MLA.

The project has broadly delivered these objectives, however, it should be noted that while the methodology provides a framework for post-project evaluation, the suggested framework also provides a project management tool that is appropriate for pre-project evaluation and project monitoring.

The framework proposed by this study is derived from Theory of Change (ToC) methodology that is essentially a comprehensive description and illustration of how and why a desired change is expected to happen in a particular context. The recommended ToC tool that has been developed is based on Results Chain Analysis (RCA).

It is proposed that the framework be developed early in the life of an innovation project, with the active involvement of the research partner, and be updated on a regular basis (suggested annually) to take into account new knowledge and particularly new values that allows assumptions to be updated and projected results to be re-evaluated.

3. Methodology

The project was conducted in a number of steps that included:

- Reviewing the status of the Development of Y15-Y20 Product & Packaging program review and framework developed under V.RMH.0088 and assessing the potential limitations of the framework;
- Desktop discovery and consideration of alternative frameworks that may be appropriate for future projects;
- A number of meetings/workshops with MLA personnel to discuss limitations of the Y15-Y20 framework, illustrated by specific investment projects, and to better understand the desirable outcomes for this project and how the proposed system would link with MLA's Equilibrium Model developed with CIE;
- Development of a recommended framework (ToC and RCA techniques);
- Application of the framework as a test case to a project determined by MLA (Bovine Collagen);
- Development of guidelines for the application of the recommended framework;
- Development of Results Chain diagrams for case study projects (Value Adding – Convenience Meals; Value Extraction – Bovine Collagen; Value Enhancement – Upgrade liver value);
- Final reporting.

The project has developed a detailed framework that generates projections of the impact of the investment in monetary and volume terms and includes the ability to capture assumptions, assumption confidence levels and conduct a sensitivity analysis. It also developed comprehensive guidelines for users to apply the Results Chain Analysis methodology in their own environment and in order to stimulate greater involvement from research partners.

While the technique has been investigated against some standing projects it would be proposed that a series of projects be assessed in order to develop a portfolio of different results chain models that can be provided to innovators to assist them to consider how a proposed project might contribute to impacts that are desirable to MLA. The RCA approach highlights that MLA objectives are not necessarily those of the research provider.

Consideration should also be given to using the framework as a project monitoring tool where the assumptions included in the Results Chain Model are tested on a regular basis (suggested annually) in order to reassess the projected impacts of the innovation.

4. Results

4.1 Project Overview

In Essence MLA invests in innovation to trigger further investment by third parties with the purpose of increasing returns for the red meat production and processing sectors.

In making these investments a number of other outcomes inevitably occur that provide economic, social, and environmental impacts that lie outside the direct red meat value chain.

For the purposes of the development of a project assessment and monitoring framework, it is necessary to define the aims of MLA investment in innovation. The aim for MLA R&D investment has therefore been defined as follows:

> ***"The aim of R&D investment by MLA is to trigger private sector investment to create beneficial red meat value chain impacts and take into account other economic, social and environmental impacts that result from the innovation."***

A desirable project assessment and monitoring framework therefore needs to:

- Capture all investment (MLA and third party) and other costs associated with the innovation;
- Capture red meat value chain impacts;
- Capture economic, social and environmental impacts outside the direct red meat value chain;
- Enable the assessment framework to capture as many potential outcomes as possible
- Be able to be used to compare impacts between diverse projects;
- Be able to be used to manage, compare and monitor projects over time.

4.2 Innovation Assessment Frameworks

Desktop research was conducted to discover ways in which private and public sector enterprises assess and monitor innovation.

While a number of methodologies are generating greater interest as analytical frameworks for product innovation, these are generally complex strategic management frameworks that involve R&D, technical development, manufacturing, logistics, marketing and business support innovation and how these components strategically fit together to result in successful innovation. Examples of these frameworks include:

- Blue Ocean Strategy[1]
- Deloitte - Fast Moving Consumer Goods [FMCG] Analytics Framework[2]
- Deloitte - Business model innovation in consumer goods. How companies are configuring their businesses to deliver exceptional performance.[3]
- McKinsey – The Business Value of Design

[1] Bringing Blue Ocean Strategy to FMCG Markets - Simon Düsseldorf and E.F.M. Wubben.
[2] Deloitte - Fast Moving Consumer Goods Analytics Framework; Point of view; Amsterdam; 2017.
[3] Deloitte - Business model innovation in consumer goods. How companies are configuring their businesses to deliver exceptional performance; 2020.

These frameworks are essentially strategic planning methodologies applied to innovation and are appropriate for large enterprises involved in FMCG innovation as an example. These frameworks are not seen as applicable to an organisation such as MLA which is essentially involved in support funding in order to trigger innovation but may have limited or no influence over many of the other strategic factors associated with successful innovation.

Traditional investment assessment frameworks that have been used by MLA in previous project evaluations include:

- Cost Benefit Analysis (CBA), and
- Return on Investment

These frameworks are particularly applicable to an enterprise investing in innovation but less appropriate for an organisation such as MLA whose strategic role is to trigger innovation that leads to meat industry value chain benefits.

Roles and limitations associated with CBA and ROI when applied to MLA's role in innovation are outlined in Figure 1 & Figure 2.

Figure 1 - Cost Benefit Analysis (CBA)

CBA is an enterprise focused analysis which assigns monetary values to costs and benefits for specific projects. CBA is:

- Good to capture enterprise cost/benefits; not so good for value chain costs/benefits, doesn't address costs or benefits outside of the enterprise
- Of limited value in comparing the impacts of differentiated innovation projects
- Difficult to capture third party investment especially over time
- Difficult to use to manage and monitor projects over time
- Outcomes are 'flat' and provide little insight into impact on the associated and upstream downstream industries

Figure 2 – Return on Investment (ROI)

ROI evaluates the efficiency of an investment and is able to compare the returns associated with different investments. ROI is:

- Good to capture enterprise cost/benefits; not so good for value chain costs/benefits, doesn't address costs or benefits outside of the enterprise;
- Provides good framework to compare differentiated innovation projects
- Can be used to capture third party investment especially over time
- Can be used to manage and monitor projects over time

There is, however, a framework that has been developed that more specifically focusses on trigger investments to stimulate change. This framework is Theory of Change and the associated Results Chain Analysis (RCA) analytical tool.

4.3 An Alternative Approach

Results Chain Analysis is a tool that shows how a project team believes a particular action it takes will lead to some desired result. More specifically, a results chain represents a team's assumptions about how projects will contribute to the development of research and development projects that will improve results in the red meat sector.

Results Chain Analysis is an approach to assessing impacts that has been widely adopted in the pro-poor private sector investment sector where trigger investments are made with the specific intention that the investment will result in the development of sustainable business growth by other enterprises that result in increased pro-poor economic activity and employment growth. It also takes into account issues such as gender engagement and environmental impact.

RCA has an existing body of international practice and guidelines compiled by DCED (Donor Committee for Enterprise Development). Reference documents include:

- Designing a results framework for achieving results[4]
- The 2018 Reader on Results Measurement[5]
- The DCED standard for measuring results in private sector development[6]
- Logic Model Development Guide[7]

The project has developed a detailed framework that generates projections of the impact of the investment in monetary and volume terms and includes the ability to capture assumptions, assumption confidence levels and conduct a sensitivity analysis. It also developed comprehensive guidelines for users to apply the Results Chain Analysis methodology in their own environment and in order to stimulate greater involvement from research partners.

It is concluded that RCA is an appropriate framework to assess and monitor MLA investment in product and packaging projects. The principles of Results Chain Analysis are provided in Figure 3.

Figure 3 - Principles of Results Chain Analysis

The framework uses the RCA and resultant projections to provide management and monitoring tools to assess impacts that results from an investment over time. RCA is:

- Good to capture enterprise cost/benefits
- Good for value chain costs/benefits
- Able to address costs benefits external to the enterprise
- An acceptable framework to compare differentiated innovation projects
- Able to capture third party investment especially over time
- Able to be used to manage and monitor projects over time

[4] Designing a results framework for achieving results: A how-to guide; Independent Evaluation Group Strategy, Learning, and Communication; International Bank for Reconstruction and Development/World Bank; 2012
[5] The 2018 Reader on Results Measurement - An introduction to the DCED Standard; Donor Committee for Economic Development; Updated August 2021
[6] The DCED standard for measuring results in private sector development - Control points and compliance criteria; Donor Committee for Economic Development; Version VIII, April 2017
[7] Logic Model Development Guide - Using Logic Models to Bring Together Planning, Evaluation, and Action; W.K. Kellogg Foundation; Updated January 2004

4.4 Theory of Change & Results Chain Analysis

The ToC framework can be developed at the beginning of a project (to help with assessing potential impacts and position against strategic plans), or to describe an existing project (so that it can be evaluated). ToC is particularly helpful when planning or evaluating a complex project but can also be applied to more straightforward projects.

Theory of Change (ToC) is a methodology for planning, participation, and evaluation that has been developed for use in the private sector, philanthropic and public sector enterprises. ToC has found particular application amongst private sector, philanthropic and public sector enterprises involved in promoting social change where the desired impacts are multifactorial.

It is focused in particular on mapping what a project or innovation does (activities) and how these lead to desired goals (outputs, outcomes, impacts) being achieved. It does this by identifying the long-term project impacts to identify the conditions (outcomes) that must be in place (and how these related to one another causally) for the goals to occur. These relationships (inputs, activities, outputs, outcomes and impacts) are mapped out in a Results Chain Analysis.

Through the Results Chain Analysis approach, the link between activities and the achievement of the long-term impacts are more fully understood. This leads to better planning, in that activities are linked to a detailed understanding of how change is expected to occur. It also leads to better project evaluation, as it is possible to measure progress towards the achievement of the identified longer-term impacts beyond the shorter term identification of program outputs.

The project has developed a guideline document titled “Using Results Chain Analysis to Improve Project Assessment & Management”. This guideline has been developed with a specific focus on application to MLA projects associated with the products and packaging portfolio. The guideline provides further information on the structure and importance of the Results Chain in project assessment and management and is provided in the attached Appendices.

Three results chains have been developed as a component of this project to provide examples of how the framework applies to different circumstances. These results chain examples are also provided in the attached appendices.

5. Conclusion

5.1 Key findings

This project concludes that:

- Results Chain Analysis is an appropriate framework for the assessment of MLA supported projects in the product and packaging portfolio;
- The framework provides a methodology that captures assumptions and makes projections based on the assumptions. As projects develop and knowledge improves these assumptions can be updated and reviewed on a regular basis (suggested not more than annually);
- Projects assessed under this framework will be able to provide a broader impact base that includes factors not traditionally assessed in CBA and ROI assessments;
- Results Chain Analysis provides a more robust framework than a CBA or ROI to assist MLA to assess and manage product and packaging products.

6. Benefits to industry

The benefits to the red meat industry flow from an improved framework to assess and manage investments in projects associated with MLA's products and packaging portfolio. The framework enables MLA to make more informed decisions about the likely scale of benefits to the industry from their decision to fund a project. It also gives MLA a tool to target its funding in specific value chain stages or market segments.

7. Future research and recommendations

As the Results Chain Analysis framework is an innovative approach to project assessment and management within MLA it is recommended that:

1. The framework be applied to a further series of say up to 10 projects within the product and packaging portfolio. This will allow the development of a greater portfolio of results chain examples that will be able to be provided to researchers to assist them to engage with the results chain analysis framework;
2. MLA consider that new projects in the product and packaging portfolio be required to develop a results chain to be included in initial submissions for funding support, and that a full results chain analysis be conducted as part of Stage 1 of successful submissions.

Appendix 1 - Results Chain Examples

Project Title: RCA Example - Value Added Ingredient

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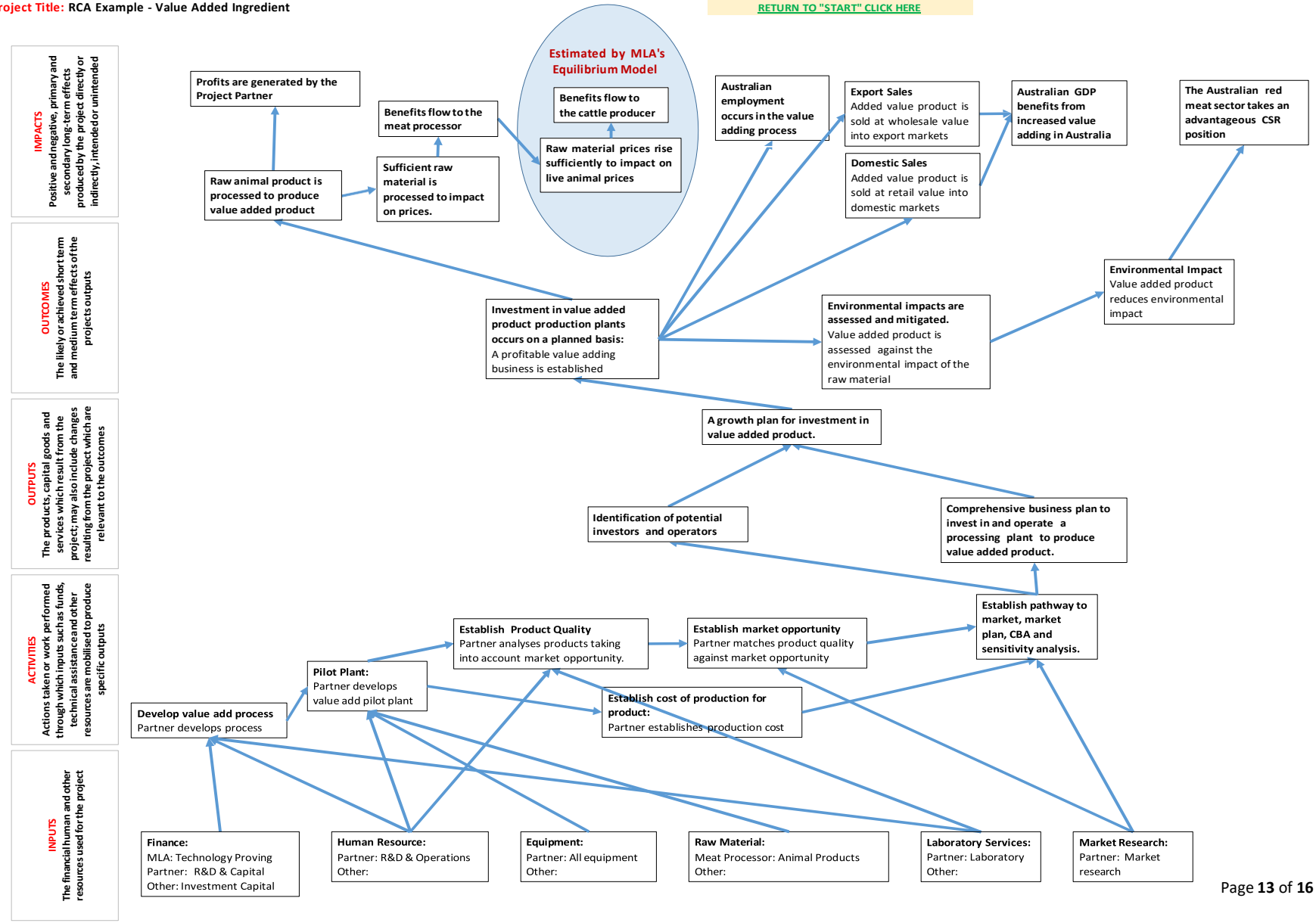

Project Title: **Results Chain Example Convenience Meal Products**

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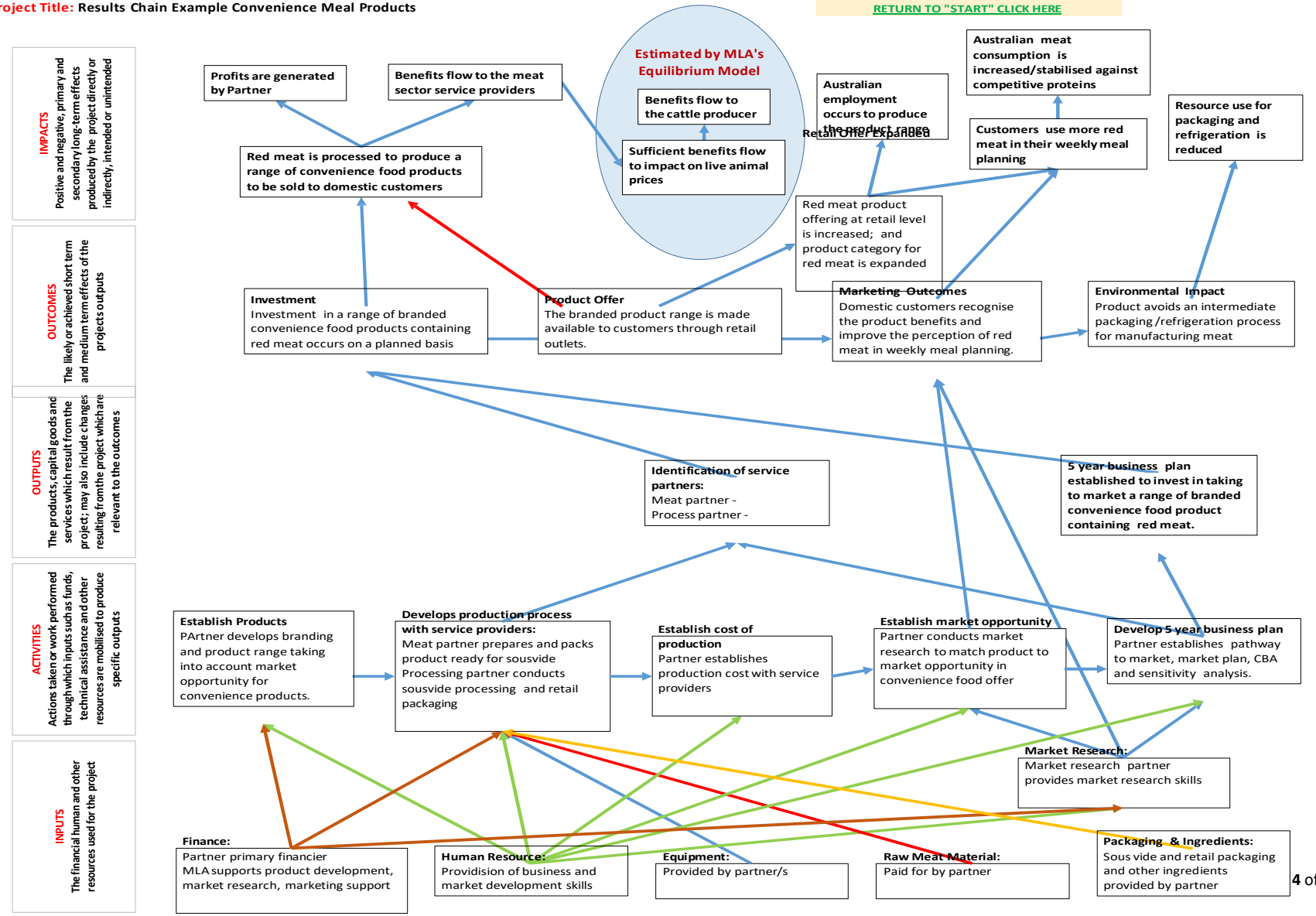

Project Title: RCA Example – Value Adding Animal Products

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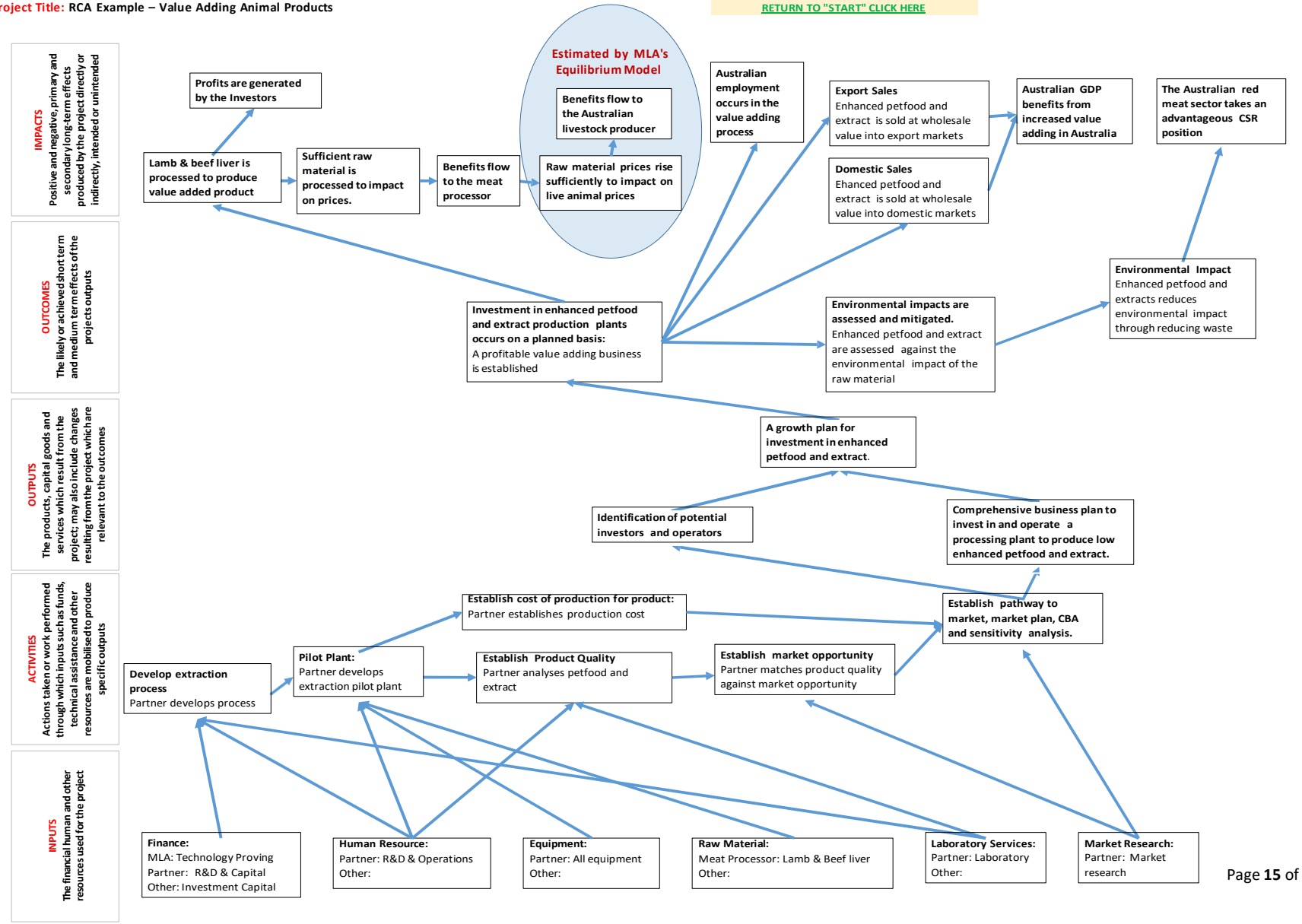

Appendix 2 - Results Chain Analysis Guideline Document

(attached)