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Evaluation | Analytics | Insights

September 2022

Impact of extension

QUICK - A semi-quantitative approach to modelling the impact of a research and extension programme in New Zealand's primary industries

QUICK framework

Today's agenda

1. Research question **(3 minutes)**
2. Overview of QUICK **(4 minutes)**
3. Components **(7 minutes)**
4. Conclusion **(2 minutes)**

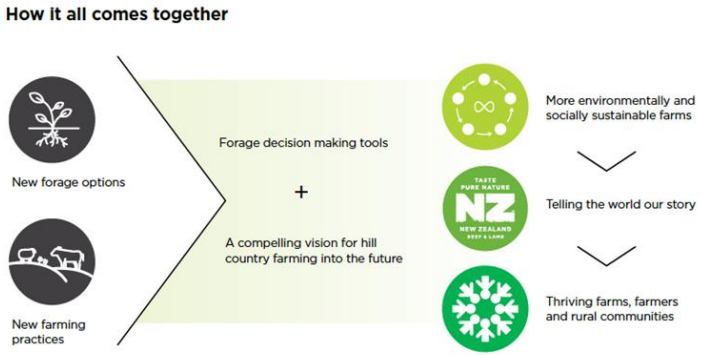
**These slides were originally designed to be presented, with the images supporting the presenter. We have added a series of comments in italics like this throughout the PowerPoint to represent the message that would have been delivered by the presenter.*

Research question

Hill Country Futures programme is…

**The $8.1m programme is focused on future proofing the profitability, sustainability and wellbeing of New Zealand's hill country farmers, their farm systems, the environment and rural communities. It differs from most pastoral-based research, in that it considers the whole-farm system and, critically, the wider communities these systems exist within.*

It incorporates traditional science research, farmer knowledge, social research and citizen science and has a strong emphasis on forages and providing decision-making tools to help farmers select the best forage option for different land management units.



Research question

Hill Country Futures programme is funded by:

beef+lamb new zealand

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

PGG WrightsonSeeds

Seed Force
an R.A.G.T company

Research question

Supporting research and extension programmes optimise impact

**This diagram represents the complexity that we need to navigate when understanding the linkage between on-the-ground interventions and how they change individual behaviour, and how that diffuses through a population to lead to industry-wide impact.*

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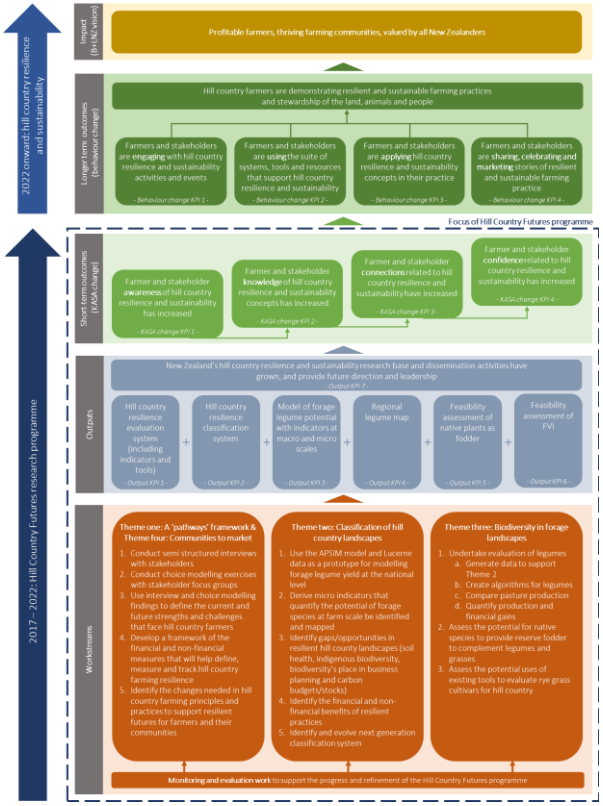
Research question

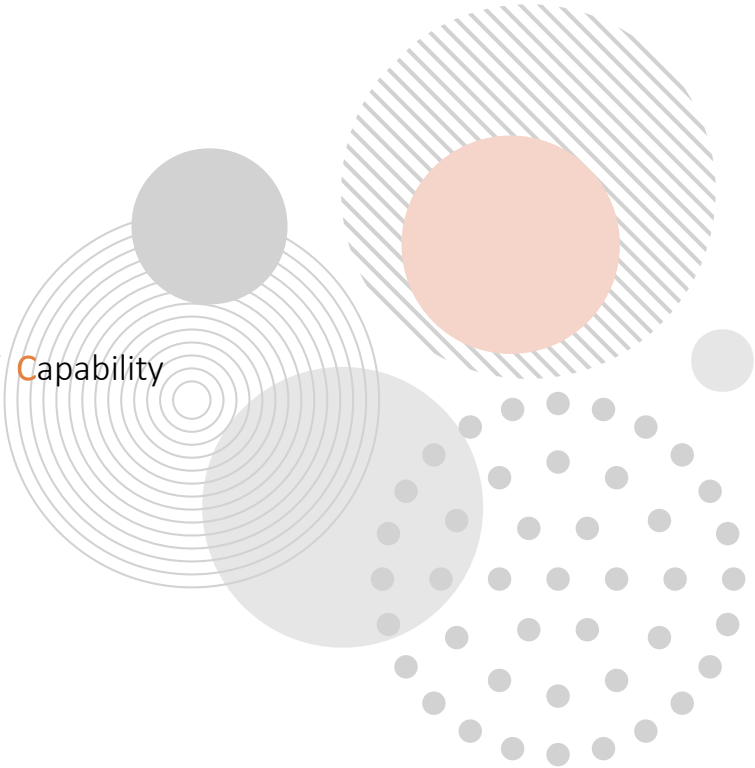
Intervention logic models only take you so far…

Intervention logic models have been widely used to visualise these complex systems. However, these often fall short when capturing crucial details of reality.



Introducing QUICK

Quantifying and Understanding the Impact of Capability and Knowledge building initiatives



**This framework aims to build on the strengths of the intervention logic models whilst addressing some of the short-fallings. It does this through adding a quantitative dimension (see the next slide).*

Overview of QUICK

The quantitative dimension

1. Provide a more rigorous approach to understanding
2. Make indicative, *quantitative* predictions
3. Improve programme design

**This slide illustrates the benefit of the quantitative dimension that is included within the QUICK framework.*

Overview of QUICK

Using QUICK, we can then answer research questions such as:

- What is the approximate impact of HCF's planned programme of interventions?
- What intervention types are more impactful for HCF? Capability or awareness building?
- What should the balance of focus be for interventions to maximise impact?

Overview of QUICK

The QUICK framework

The influence interventions have on an individuals state of enablers

Agent-based approach

The diffusion network of awareness, skills and aspirations

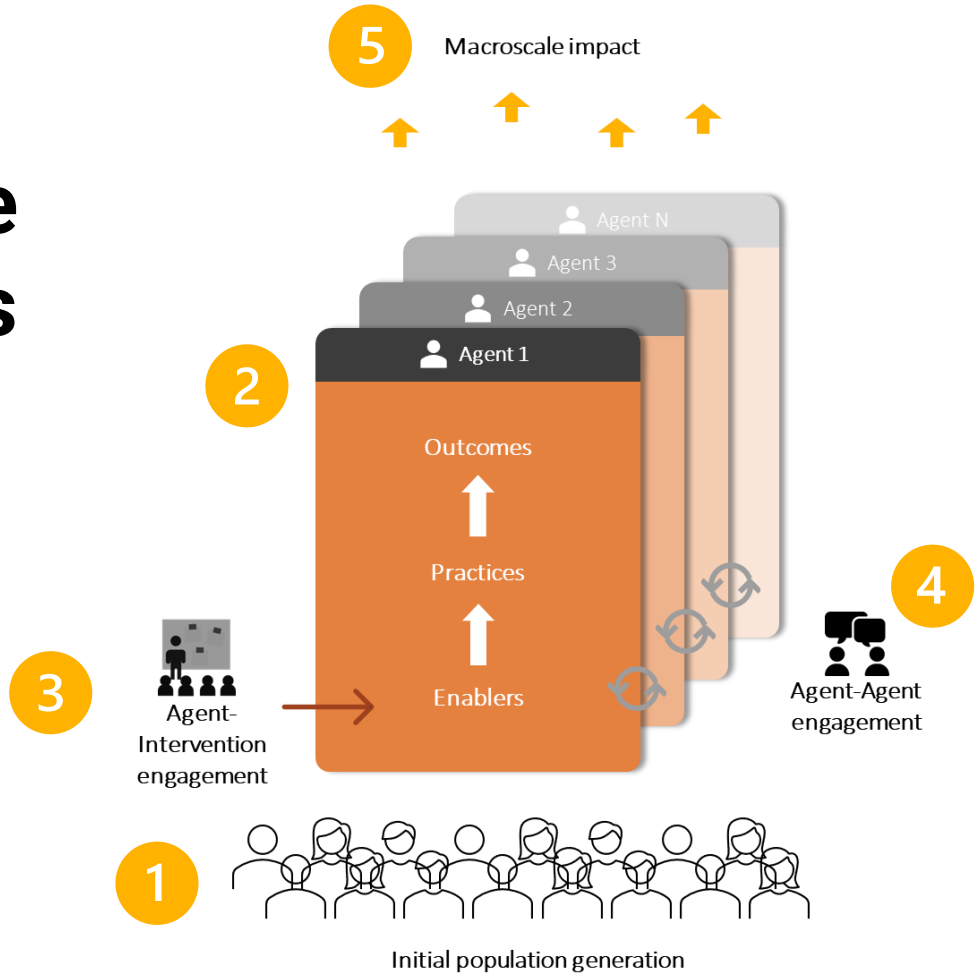
Models an individuals state of enablers, practices and outcomes

The impact of outcomes

**These are key features of the QUICK model, which correspond to the five components of the framework.*

QUICK components

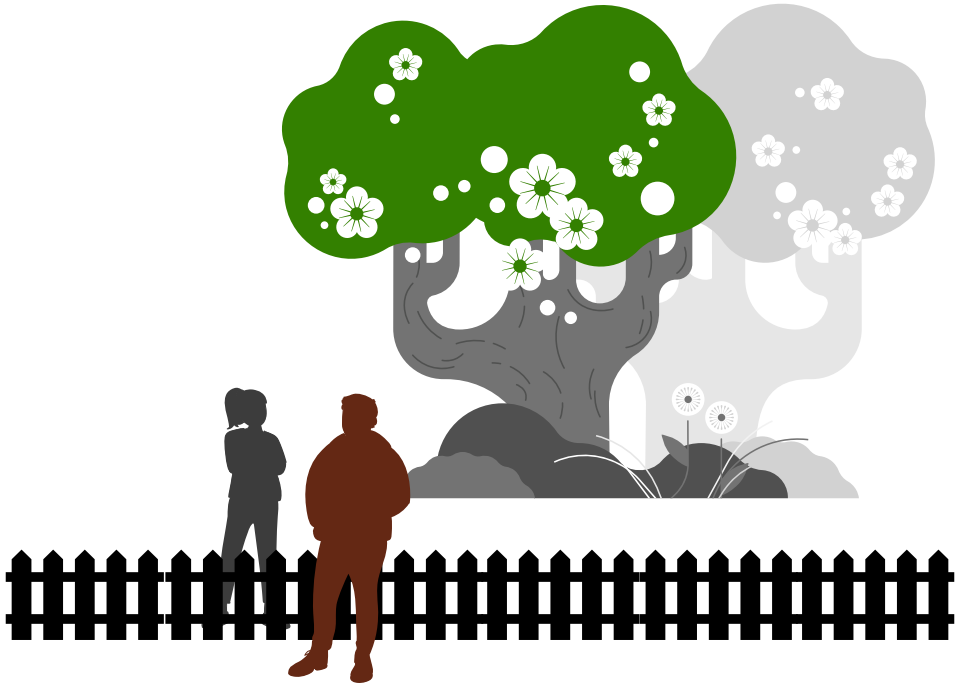
QUICK's five components



**Each of these five components are described in more detail in the slides that follow.*

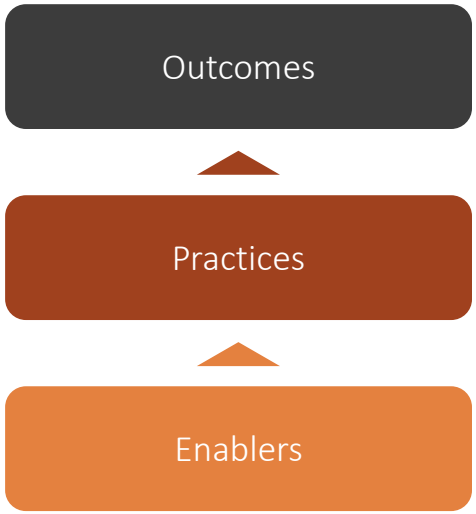
Initial population generation

This component defines and generates the population of virtual farms and farmers. This is then calibrated with existing databases.



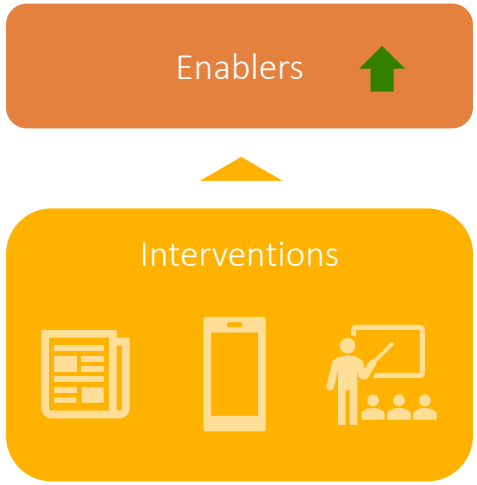
Enablers to practices to outcomes

This component characterises the individual enablers of practice *(skills, aspirations, empowerment and incentives)*, what the individual does as a result. With the combined on-farm practices, this component then estimates the level of on-farm outcome.



Influence of interventions

This component explores how agents engage with interventions, and how, as a result, they shift their awareness, skills and aspirations towards a practice.



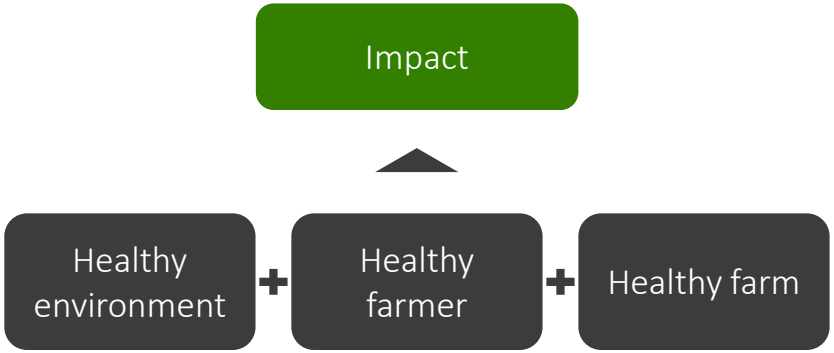
Agent-agent engagements

This component characterises the social network, and the influence conversations have on shifting awareness, skills and aspirations towards a practice.

QUICK components

Impact

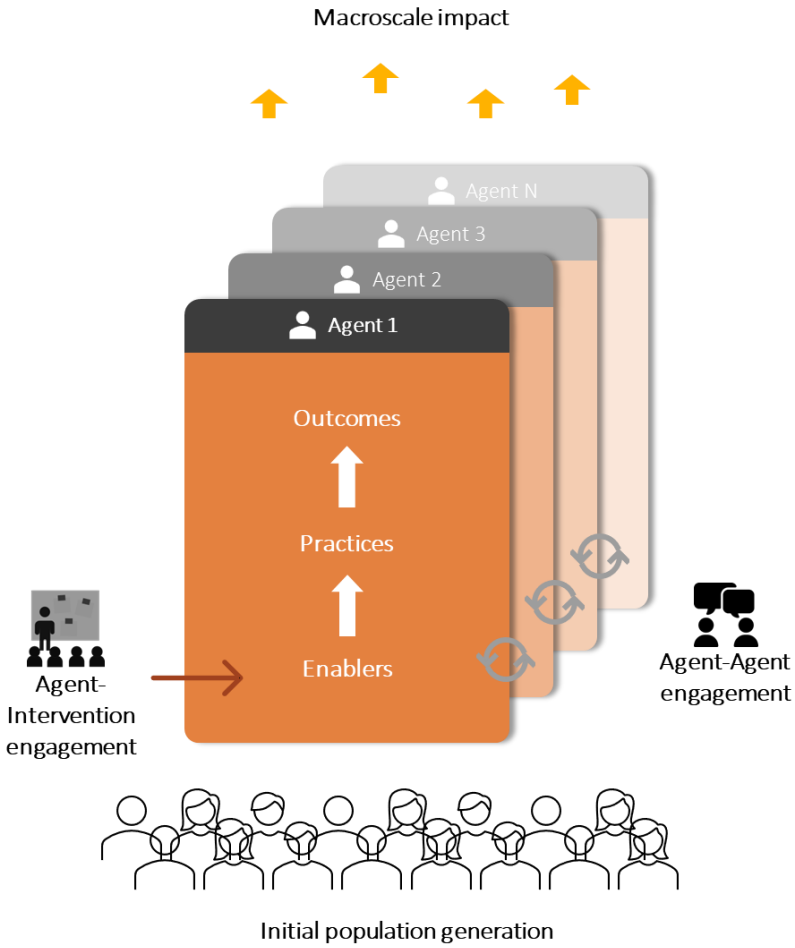
This component defines and estimates industry-wide impact. It does this through putting a common value on the collective on-farm outcome.



QUICK components

Calibration techniques

**Whilst this framework has many strengths, the approach makes calibration difficult as we require datasets that target specific attributes (i.e. someone's skills towards a particular practice). To approach this, we attempt to make the most of existing datasets (i.e. AgriBase) or other models (i.e. the ADOPT model). For more challenging parameters, we use what we call thought experiments – using a "wisdom of the crowds" approach.*



Conclusions

1

Firmed up on how HCF creates impact

2

Develop an indicative estimate on the value of the research and extension elements of HCF

3

Informed and elevated programme design

**As a result of applying this framework to the HCF programme, we have been able to achieve the three outcomes listed above. We aspire to continuously evolve this framework to best support extension initiatives within the primary industries. We are open to collaborators.*

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Driving practice change through evaluation and analytics

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