

KIT 5.2

Understand grain grower decision-making and the drivers for adoption of new technology



Impact	Growers and their advisers have the knowledge, tools and understanding of decision-making behaviours to make informed decisions and accelerate the rate of adoption of new knowledge, technology and practices to improve profit and manage risk.
Summary	<ul style="list-style-type: none">• Growers and their advisers have an enhanced understanding of the behaviours that influence decision-making and risk management.• The rate of adoption of new knowledge, technology and practices by growers is accelerated through improved knowledge of decision-making.

OVERVIEW

The adoption of research and development (R&D) outcomes is fundamental to driving the future profitability and productivity of Australian grain growers. The adoption of R&D outcomes is therefore central to the GRDC delivering on its purpose of “investing in RD&E to create enduring profitability for Australian grain growers”. The adoption of new knowledge, technology and practices requires the key decision makers in grain growing businesses to be motivated to effect change.

Grain production businesses typically encounter a wide range of multifaceted variables that can impact on their profitability. Effective management of these variables requires decisions ranging from simple through to highly complex.

There is increasing recognition that the behavioural sciences provide powerful insights into understanding the behaviours and motivations of grain growers and their influencers, leading to enhanced understanding of decision making. Enhanced understanding of decision making can lead to more effective technology/knowledge transfer methods which in turn can accelerate the adoption of R&D outcomes by grain growers.

The management and operational decisions made by grain growers are not always based purely on sound economics or at times on logical reasoning. The study of behavioural economics has identified that whilst decisions are not always made on a purely economic basis, the way behaviours or decisions vary from logical patterns tend to do so in a manner which is predictable.

Key Investment Target (KIT) 5.2 seeks to accelerate grain grower adoption of new knowledge, technology and practices through the application of understanding of grower behaviours and motivations, including knowledge on the drivers of and barriers to adoption. This strategy is aligned to multiple other KITs and should be utilised to inform approaches to driving desired practice change resulting from research and development outcomes.

FUTURE RD&E FOCUS

SCOPE – Understanding of behaviours of growers and their influencers

Understanding of growers and their influencers is improved through knowledge of behavioural sciences.

Understanding the decision making of grain growers and their influencers firstly requires improved knowledge of human behaviour and how behavioural science principles can be deployed to accelerate adoption of R&D outcomes. The GRDC and other RD&E investors need to understand these behaviours, including beliefs, needs, risk appetite, biases, appetite for change and motivations, in three main target audience segments:



- a. growers and their influencers
- b. GRDC staff and their RD&E partners
- c. other industry stakeholders

The effectiveness of segmentation of these target audiences as a tool to accelerate adoption is also a focus of this strategy.

Grain grower attitudes to different management practice options can vary widely. That an individual grower is an innovator or an early adopter of one management practice holds little indication of their persuasions on the adoption of a secondary unrelated practice. The behavioural sciences are an underutilised lens through which to understand the behaviours and decision making of grain growers and should therefore be deployed by the GRDC.

There is a need to better understand who the key influencers on grain growers' decision are making. It is also important to understand how grain grower behaviours vary according to factors such as geographical location, business type, and the specific practice change being considered. The impact on behaviours and decision making of social and demographic issues such as community acceptance of farming practices, roles of women in agriculture, and the significance of adoption pathways for differing demographics is not well known. It is known, however, that greater than 70 per cent of grain growing businesses utilise at least one type of adviser (agronomists, financial consultants, grain marketers etc), and there is a growing trend in farm businesses changing their farm business governance structure to include advisory boards and independent directors. The understanding and significance of the impact of these structural, social and demographic changes on the drivers of adoption by grain growers is only in its infancy and once developed could potentially deliver significant benefit toward accelerated adoption.

Despite recognising the growing influence of advisers, the reach and significance of their 'influence' on grain grower decision making behaviour is both poorly understood and under-utilised in driving improved adoption of R&D outcomes. Extension efforts to drive adoption have previously been largely focused on grain growers and have not specifically targeted their key influencers. Systematic identification and understanding of key influencers and their relationships with different grower demographics is important. Behavioural sciences can assist in understanding which influencers to target, thereby accelerating the adoption of R&D outcomes.

Investment Outcome 5.2.1 – Growers and their advisers have an improved understanding and knowledge of behavioural sciences and how they can be applied to accelerate the adoption of new technologies and knowledge.

It is important to understand the different behaviours and variable decision making of grain growers at different points of the adoption pathway (such as innovators versus early adopters). We do not currently know which individual growers are the early adopters of specific practice/s or understand their decision making processes. Extension strategies aligned to different cohorts of growers on the adoption pathway will be important in accelerating the adoption of R&D outcomes.

Improved understanding of growers and their influencers through knowledge of behavioural sciences is an important target of this investment strategy. This improved understanding can be applied to accelerate adoption of new knowledge, technology and practices that in turn enhances grain grower profitability.

Investment Outcome 5.2.2 – GRDC understands who are the key influencers impacting growers' decision-making for specific types of management decisions.

To apply learnings around the behaviours of influencers as well as innovative and/or early adopter growers, GRDC will need to be able to identify who these growers/influencers are as individuals and/or groups. Once these key individuals and/or groups are identified, specifically targeted and impactful communication, extension, and decision support tool development can be achieved.

The GRDC will invest to identify key influencers, innovators and early adopters for specific practices and to generate adoption profiles for individual practices which allow extension and adoption messages to be finely focused and targeted.

An industry-wide approach involving other RDCs, private sector, non-traditional RD&E partners and others could accelerate adoption and ensure duplication is minimised.



Investment Outcome 5.2.3 – GRDC has a comprehensive understanding of growers’ and their advisers’ behaviours and motivations, including beliefs, needs, risks, biases and appetites.

To accelerate the adoption of new knowledge, technology and practices, the GRDC will need to invest in developing a comprehensive understanding of the needs, beliefs, risk appetite, biases, motivations and behaviours of grain growers and their influencers. From a solid platform of knowledge, information can be tailored in a manner which triggers decision makers to consider all relevant factors and make more rational, logical and informed decisions around adoption of new knowledge, technology and practices.

SCOPE – Understanding of the drivers of and barriers to adoption

The risks, driving forces and barriers to adoption of new knowledge, technology and practices are better understood.

This scope aims to understand the specific risks, drivers, restraining forces and barriers to adoption, and learning how best to adapt or modify communications and extension to address these factors. Previous research has generated information regarding the drivers, barriers and risks to adoption. This research, however, has tended to focus on specific practices and has largely been reactive rather than strategic in nature. *Scope – Understanding of behaviours of growers and their influencers* applies a behavioural science lens to understanding the behaviours and decision making processes of grain growers and their influencers. In contrast, *Scope – Understanding of the drivers of and barriers to adoption* seeks to further understand the forces at play which impact the rate of adoption. These two target scopes – understanding the human behaviour and understanding the forces, including risk appetite, drivers, and barriers – can then be integrated and diligently applied to move the status quo and accelerate adoption, this being the objective of *Scope – Acceleration and maximisation of the impact of adoption*.

Investment Outcome 5.2.4 – Growers and their advisers understand the relative importance and whole-of-farm systems impacts of key decisions, and are able to identify the key profit-driving decisions.

There are key decision points across the whole farm system that can have significant impact on other decisions, operations and profitability. Grain growers and advisers need to be able to clearly identify key decisions that can impact the whole farm system, both in short and long-term time frames.

Investment Outcome 5.2.5 – GRDC has identified the risks, driving forces and barriers to adoption of key management decisions.

At present, GRDC and its partners rarely use behaviour science methods in the delivery of RD&E outcomes. It is understood that different cohorts of decision makers have preferred methods of receiving information that is framed to their learning style and adapted to their known behavioural biases. An improved understanding of the drivers and barriers to adoption coupled with appropriate communication and extension tools for a range of learning styles could enable faster adoption of RD&E outcomes.

Investment Outcome 5.2.6 – GRDC and its partners in research, development and extension (RD&E) delivery have identified and developed metrics to measure the impacts of behavioural interventions on the adoption of new knowledge, technology and practices.

Previous GRDC communications and extension outputs have largely focused on the driving forces for adoption and not the barriers which are often more powerful motivators of adoption behaviour. It is important that the GRDC understands both the drivers and the barriers to adoption, and to do this, the GRDC and its partners require appropriate methods to measure the impact of all investments.

Investment Outcome 5.2.7 – GRDC and its RD&E delivery partners are using segmentation to more effectively influence decision-making and the adoption of new knowledge, technology and practices.

To identify and understand the decision making behaviour of growers, the GRDC needs to firstly identify the drivers and barriers of practice adoption. The value of this knowledge will be further maximised if it can be based on successful



adoption examples for a range of grain grower practices. Future RD&E investment will focus on:

- The GRDC and its partners identifying and understanding the risks, driving and restraining forces, and barriers to adoption of new knowledge, technology and practices
- Understanding the efficacy of segmentation in relation to decision making behaviours on the rate of adoption of new knowledge, technology and practices.

SCOPE – Acceleration and maximisation of the impact of adoption

An improved understanding of grower decision-making is applied to accelerate the adoption of new knowledge, technology and practices to improve profit and manage risk.

Currently, grain growers' decision making behaviours are not well understood, and this is impeding the ability to maximise rates of adoption. The GRDC investment process involves a gap analysis of the specific constraint to grain grower profitability and/or a specific opportunity to enhance grain grower profitability. A key component of this gap analysis is an assessment of grain growers' motivations, attitudes, knowledge, ability and technologies (MAKAT) required to overcome the constraint or capture the opportunity. While MAKAT is a powerful tool for advising investment strategy, the underlying weakness to the use of the tool is the lack of knowledge on how best to influence behavioural change and adoption once the R&D has been completed. Additional analysis is required to determine the best adoption pathway using behavioural science.

At present, a range of available decision support tools do apply the principles of behavioural sciences. There is, however, confusion regarding which tool is the best and most appropriate for a specific situation, practice or circumstance.

This Scope utilises the knowledge of human behaviours and the understanding of the adoption forces (including risk appetite, drivers and barriers) to increase the rate of grower adoption and to deliver on the GRDC purpose of creating enduring profitability for growers.

Investment Outcome 5.2.8 – Growers and their advisers have access to information and knowledge presented in a manner based on behavioural science principles.

To effectively understand the behaviours relating to growers and advisers accessing and using information and generating new knowledge, GRDC and broader industry requires 'market' segmentation of target audiences and practices based on sound behavioural science principles. The potential effectiveness of identifying the most appropriate grain grower segments with the view to this assisting the accelerated adoption of specific management practices or differences across types of practices (segments) is largely not understood. Development of techniques or tools based on behavioural science principals would potentially enable the rapid uptake of research outcomes and enhance knowledge transfer.

Investment Outcome 5.2.9 – The grains industry has access to metrics to measure the rate of adoption and the variables that influence that rate of adoption.

Based on the knowledge and understanding acquired from the *Scope – Understanding of behaviours of growers and their influencers* and *Scope – Understanding of the drivers of and barriers to adoption*, GRDC will invest in:

- developing behavioural science criteria to guide information, extension and communication delivery of GRDC R, D&E investment outcomes that ultimately accelerates rates of adoption
- developing adoption pathways for delivery of all GRDC investments which in turn would accelerate rates of adoption
- developing and deploying metrics to measure the rate of adoption, including the degree to which the use of behavioural sciences or other variables impact the rate of adoption
- Upskilling and building capacity of new and existing influencers to accelerate the rate of adoption
- Ensuring information, extension and communication delivery to grain growers and their influencers is based on behavioural science criteria to accelerate rates of adoption
- Ensuring all GRDC R&D outcomes have an adoption pathway that includes an understanding of whole farming systems and profit impacts to accelerate the rate of adoption by growers
- Collaborating with industry to strengthen its knowledge and understanding of behavioural sciences to create enduring profitability for all growers.



Investment Outcome 5.2.10 – All RD&E outcomes have an adoption pathway that includes an understanding of whole-of-farm systems and profit impacts, to accelerate the rate of adoption by growers.

The integration and application of knowledge gained from *Scope – Understanding of behaviours of growers and their influencers* and *Scope – Understanding of the drivers of and barriers to adoption* will be critical in accelerating the adoption of R&D outcomes by grain growers. This integration and application is the function of *Scope – Acceleration and maximisation of the impact of adoption*.

A key success of KIT 5.2 is for all future investments by GRDC to have incorporated the knowledge and insights gained from this KIT strategy. Each KIT strategy would ideally develop specific approaches to address behavioural change in target audiences and/or adoption ready pathways to market.

Future RD&E investment will focus on:

- understanding of behavioural sciences to accelerate the adoption of outcomes from GRDC investments
- understanding the value of segmentation of audiences/stakeholders including grain growers, their influencers and their inter-relationships
- a comprehensive understanding of grain growers' behaviours, including beliefs, needs, risk appetite, biases and motivations
- a comprehensive understanding of grain growers' influencers, and their needs, beliefs, risk appetite, biases, appetites to influence change, motivations and behaviours.