

IDENTIFYING BARRIERS AND ENABLERS:

A Guide to Matching Strategies for
Agricultural Impact



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Identifying Barriers and Enablers: A Guide to Matching Strategies for Agricultural Impact

Overview

This guide is designed to help you identify the real-world barriers and enablers that influence the adoption of change in agriculture, and to match them with practical strategies and initiatives that can deliver meaningful impact.

Whether you're designing a program, supporting practice change, or developing an adoption pathway, success depends not just on good ideas, but on how well they align with the people, systems, and conditions they're intended to serve. Too often, interventions are rolled out before understanding what might help or hinder adoption. This guide offers a structured, evidence-based approach to change, rooted in behavioural science and grounded in the realities of Australian farming systems.

It introduces two simple but powerful tools:

- The COM-B model (Capability, Opportunity, Motivation – Behaviour), and
- The Theoretical Domains Framework (TDF)

Together, these frameworks help you look beneath the surface to understand what drives behaviour and how to design with impact in mind.

This guide is a companion to the EXPLORE and DESIGN stages of the [*Pathways to Impact Framework*](#), and is suitable for anyone involved in agricultural extension, program design, policy, or stakeholder engagement, from grassroots facilitators to program funders and research teams. It includes practical prompts, strategy mapping, and initiative suggestions to support design, planning, and evaluation.

At its core, this guide helps you move from assumptions to insight, and from intention to impact.

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Identifying barriers and enablers

Why understanding enablers and barriers matters

In agricultural extension and adoption, success doesn't just depend on having a good idea; it depends on whether that idea works for the people it's intended to serve. In agriculture, stakeholders operate in complex, dynamic environments shaped by climate, markets, social networks, policies, values, and lived experience. What enables change for one group may be a barrier for another. That's why identifying the specific enablers and barriers experienced by your target audience is a critical step in designing effective strategies.

By taking the time to understand what might help or hinder adoption, whether it's trust in information sources, timing of support, financial incentives, regulatory settings, or social norms, you can ensure your initiatives are practical, relevant, and respectful of the realities on the ground. This step builds the foundation for extension efforts that go beyond awareness and advice, and instead focus on reducing friction, amplifying motivation, and creating the conditions that make change not just possible, but sustainable.

Understanding behaviour change

When it comes to encouraging adoption of new practices in agriculture, it's not enough to assume that more information or better technology will lead to change. Adoption is a behavioural process where people need the capability, opportunity, and motivation to do something differently. That's where the COM-B model (Capability, Opportunity, Motivation – Behaviour) is useful. It offers a simple, evidence-based way to explore the real-world factors that influence behaviour and decision-making.

Building on this, the Theoretical Domains Framework (TDF) breaks these three components into 14 more detailed domains, like skills, beliefs, social influences, environmental context, and reinforcement. These domains help unpack the complexity of human behaviour in a structured way.

Using COM-B and TDF together can help agricultural extension practitioners move beyond surface-level assumptions and get to the root causes of what enables or prevents change. It ensures strategies are not just well-intentioned but well-matched to the barriers farmers experience; whether they're physical, psychological, cultural, or systemic.

These models also support participatory design by creating a shared language for exploring behaviour with stakeholders. When used thoughtfully, they lead to more targeted, practical, and effective extension and adoption strategies that meet people where they are and help them get to where they want to be.

What is the COM-B Model?

COM-B (capability, opportunity, motivation – behaviour) is a behaviour change theory that explains the underlying mechanisms of change. It consists of three factors: capability, opportunity, and motivation. To change, a person needs:

- To be capable of change (e.g., having the knowledge and skills to be able to change),
- the opportunity to change (e.g., to be in an environment that supports them to change), and
- to be motivated to change.

In the context of agriculture, we have observed a significant emphasis on building capability, such as knowledge and skills, along with a growing focus on creating opportunities for change, such as accessibility to on-farm support systems, such as agronomists, business coaches, or programs that address cost barriers, such as rebates for farm-tech adoption. However, comparatively less attention

is paid to enhancing people's motivation to change. That's what makes the COM-B so helpful; it can help us understand and address those motivational barriers.

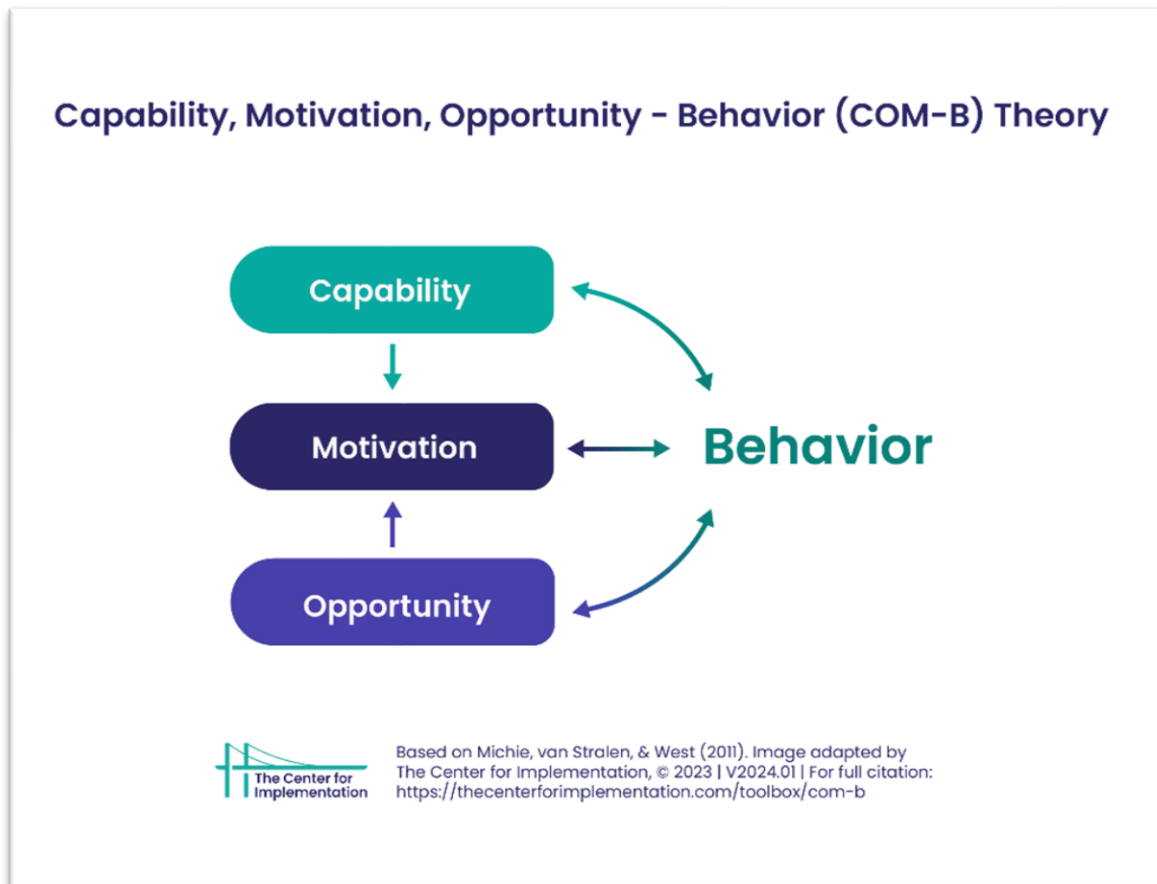


Image 1: COM-B Theory – Source: Center for Implementation

What is the Theoretical Domains Framework (TDF)?

The Theoretical Domains Framework (TDF) is a widely used behaviour change framework that supports the identification of individual barriers and facilitators to change.

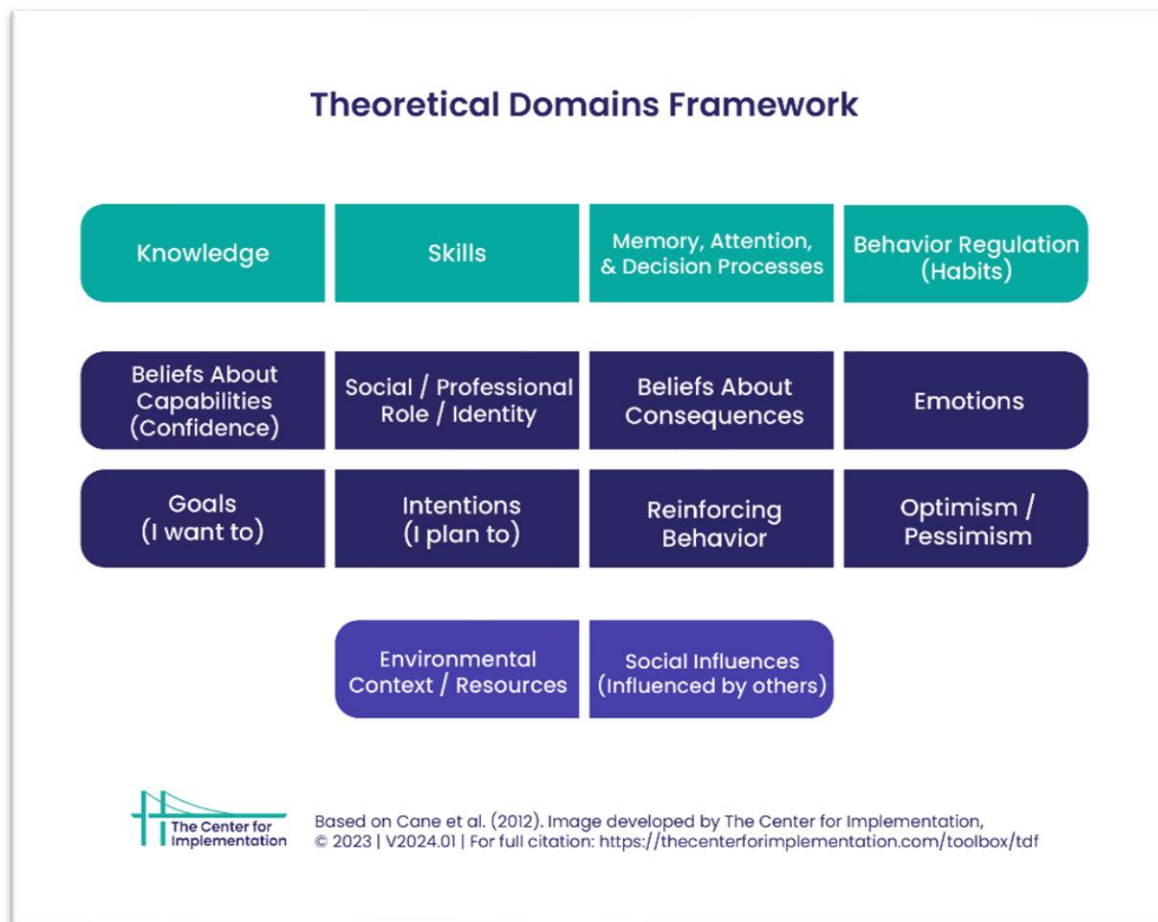


Image 2: Theoretical Domains Framework (TDF) – Source: Center for Implementation

Definitions of the TDF model can be found in the Definitions section at the end of this document.

Originally developed by psychologists in the UK (Cane et al., 2012), the TDF is embedded in the larger Behaviour Change Wheel (Michie et al., 2011) and has become a cornerstone in implementation science and change efforts across health, education, and social sectors and has great potential for broader application in agriculture.

How the COM-B and TDF work together

COM-B is one of the most easily understandable theories of change. The TDF takes the COM-B one step further by expanding on the three categories of the COM-B. There are 14 domains of the TDF, and they make the most sense when you group them into the COM-B categories (image 3).

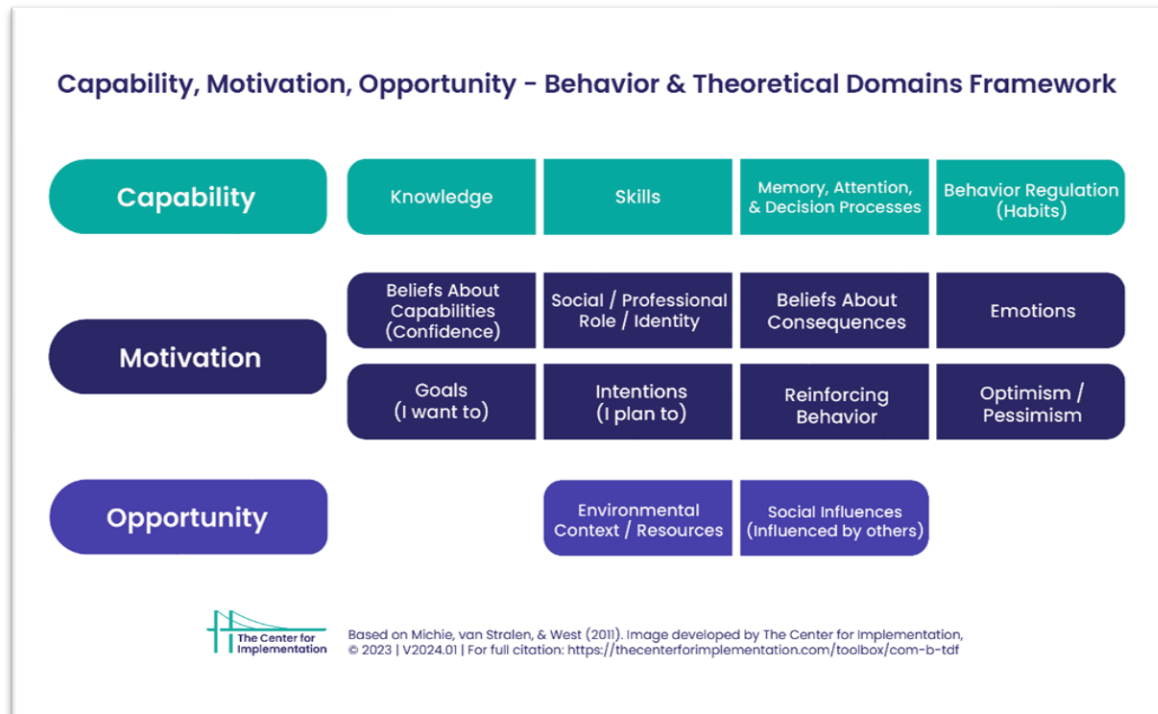


Image 3: COM-B and TDF Framework – Source: Center for Implementation

How to use this guide

As part of the Pathways to Impact Framework, in particular the EXPLORE and DESIGN stages, it is critical to consider the barriers and enablers that will impact adoption. The first step should be exploring these barriers and enablers BEFORE identifying strategies and initiatives. This is fundamentally one of the greatest impediments the agriculture sector has faced in achieving wide-scale, effective extension and adoption.

The *Pathways to Impact Framework* encourages you to design with others, so that you have a diverse group of end-users, or target audience that you can step through the process to gain a better understanding, and design appropriately.

It's important to be very clear on your target audience, or end-user. The trap is being too broad, and your change may not be as impactful. As the saying goes, less is more. Historically, a broad net approach is taken to extension and adoption, which runs the risk of impact dilution. For example, rather than saying your target audience is all broadacre cropping system businesses in NSW, you may be better off refining this to non-corporate farm, broadacre cropping systems in the Riverina of NSW. This will help you to explore the types of barriers, enablers, and needs your target audience will have, and lead towards improved impact.

Step 1: Strategic vs tactical and simple vs complex change

First, it's important to consider the type of change you are asking of farmers.

[Kaine et. al. \(2024\)](#) found that when you describe the type of change you are asking a farming system to make - strategic, tactical, complex and simple, it improves how you consider the strategies, initiatives, resources, skills, knowledge, planning and time needed to implement different types of changes.

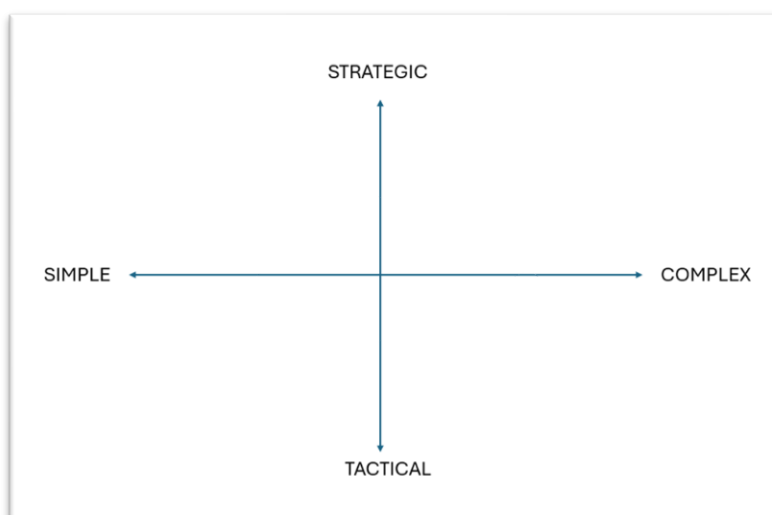


Image 4: Matrix representation of the strategic, tactical, simple and complex change

Change can be strategic, or tactical, or both. Let's look at an example of how this differs:

EXAMPLE:

STRATEGIC change could be the introduction of price premiums for farm produce from systems that enhance natural capital and is only accessible when farmers meet specified reporting requirements. In this example, there would need to be a strategic shift in the business operation, and the systems it operates both on-farm, and in the running of the business.

TACTICAL change could be adopting the use of a new soil biology treatment to boost soil health and build soil carbon as part of enhancing natural capital on the farm, in this case, the soil.

Additionally, the change can be complex, or simple, or both. For example:

COMPLEX change could be adopting a new software system that requires extensive user training and integration with existing machinery to meet the reporting requirements as part of the new price premium incentive.

SIMPLE change could be modifying machinery to apply the new soil biology treatment to improve soil health.

As you can see, when you consider the change in this regard, it will help you to form a clearer perspective of the barriers and enablers to adoption and activate suitable strategies and initiatives to drive the desired behaviour or practice change.

Step 2: Identifying barriers and enablers

Identifying the barriers and enablers farmers face before planning interventions is critical to designing solutions that work in practice. Without understanding what's helping or hindering change on the ground; whether it's a lack of knowledge, skills, time, confidence, support, or resources, well-meaning initiatives risk missing the mark. By taking the time to explore farmers' real-world experiences, motivations, and constraints, we can design strategies that are more targeted, practical, and meaningful. This not only improves adoption outcomes but also builds trust and ensures that time, money, and effort are invested where they'll have the greatest impact. In short, starting with insight ensures interventions are grounded, not assumptions.

What is a barrier? A barrier is what could get in the way of adoption. Barriers may be at an industry level, regional level, farm business level, or at an individual level. It's important to consider all these scales and accept that you may identify a wide range of barriers.

What is an enabler? An enabler is something that will help achieve success. It may be unique to the industry or the region. It may be someone, something, or an existing system. It is something you can leverage for success.

The *Pathways to Impact Framework* encourages 'design with others' as a key principle of the DESIGN stage, so by this time, you should have plans underway to engage with a group of others using a participatory approach that matches the nature of your work.

So, let's move to thinking about the end-user or the target audience and using the COM-B and TDF model.

Step 3: Using the COM-B and TDF Frameworks

The following questions can start the process. You may like to consider these before bringing together a diverse group of people, but be careful of forming your own opinions and biases. Remain open and curious about how you can get the best possible impact, rather than taking a linear or pre-formed view of what needs to happen.

Let's start with COM-B Capability and the associated TDF domains that relate to capability.

Note: We have chosen current tense, adjust as you see fit.

COM-B Capability

Does the person have the physical and psychological ability to perform the behaviour or practice change?

TDF domains related to capability:

- Knowledge – *Do they know what's being asked of them, and why it matters?*
- Skills – *Do they have the right skills or know-how to do it well?*
- Memory, Attention, and Decision Processes—
 - *Can they stay focused and make decisions about what to do, when to do it, and how?*
 - *Do they have internal competing priorities?*
- Behavioural Regulation – *Are they able to stick with the change and manage how they do things over time?*

Now let's consider COM-B Opportunity and the associated TDF domains that relate to Opportunity:

COM-B Opportunity

Does the environment support people to change?

TDF domains related to opportunity:

- Environmental Context and Resources—
 - *Do they have access to the support, advice, or resources they need to make the change work?*
 - *Do they have competing priorities of an external nature?*
 - *Do they have the time?*
 - *Do they have access to the required financial resources?*
- Social Influences – *Are people around them, such as peers, advisors, or leaders, helping or hindering the change?*

Now let's consider COM-B Motivation and the associated TDF domains that relate to Motivation:

COM-B Motivation

Does the person want to change?

TDF domains related to motivation:

- Beliefs about Capabilities – *Do they feel confident they can make this change successfully?*

- Social/Professional Role and Identity – *Does this change feel like a natural fit with how they see their role or identity?*
- Beliefs about Consequences – *Do they believe this change will make a real difference, for them, their farm, their family, their business or their community?*
- Emotions – *Are emotions like fear, frustration, or excitement helping or holding them back?*
- Goals – *Is this something they're personally working toward or see as important right now?*
- Intentions – *Are they ready and planning to make this change?*
- Reinforcement – *Are there rewards, habits, or systems that are pushing them to keep doing what they're already doing, or to try something new?*
- Optimism/pessimism – *Do they feel hopeful or doubtful about whether the change will actually work out?*

Make sure you record all this information, as it's crucial information and can be used when developing the monitoring and evaluation aspects of your program or project in the PREPARE and LEARN stages of the [Pathways to Impact Framework](#).

Step 4: Moving to strategies and initiatives

Now that you have a better understanding of the capabilities, opportunities and motivations your target audience or end-users may have, it's time to think about the right types of strategies and initiatives that align with addressing the barriers or enablers.

If we revisit the Behaviour Change Wheel (Image 5), you can see there are a range of 'intervention functions' and policy categories that you can consider aligned to the COM-B model.

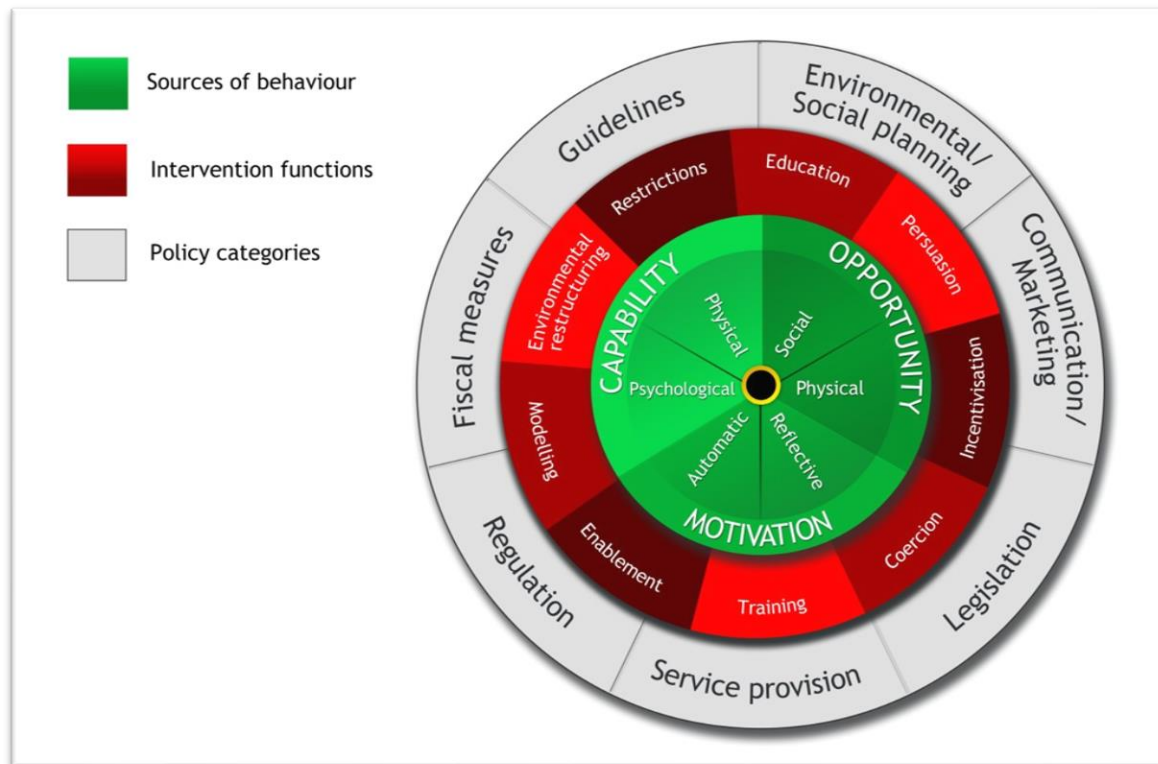


Image 5: Behaviour Change Wheel – Source: Michie et al.

If we take a practical approach, we can align initiatives to several 'functions', which are the 'types of how' (Center for Implementation). There are eight functions:

1. Education – Increasing knowledge or understanding, with the focus on the psychological capability of 'understanding'
2. Training – Imparting skills, with the focus on the physical capability of 'doing'
3. Modelling – providing an example for people to aspire to or imitate e.g., field trials
4. Persuading – Using communication to induce positive or negative feelings or stimulate action
5. Incentivising – Creating an expectation of reward
6. Enabling – Increasing means/reducing barriers to increase capability or opportunity
7. Environmental restructuring – Changing the physical or social context
8. Restriction – Using rules to reduce the opportunity to engage in target behaviours (or increase target behaviours by reducing opportunities to engage in competing behaviours).

If we overlay these functions with the COM-B and TDF model, you will find a supportive guide on the types of strategies or initiatives that align with achieving behaviour or practice change. Table 1 maps how each function aligns to the COM-B and TDF model.

Table 1: Mapping functions to barriers and enablers (mapped to COM-B and TDF models)

COM-B	TDF Domain	Educating	Training	Modelling	Persuading	Incentivising	Enabling	Environmental Restructuring	Restriction
Capability	Knowledge	✓							
	Skills		✓						
	Memory, Attention and Decision Process		✓				✓	✓	
	Behaviour Regulation (habits)	✓	✓	✓			✓		
Motivations	Beliefs and Capabilities (confidence)	✓		✓	✓		✓		
	Social / Professional Role / Identity	✓		✓	✓				
	Beliefs About Consequences	✓		✓	✓				
	Emotions			✓	✓	✓	✓		
	Goals (I want)	✓		✓	✓	✓	✓		
	Intention (I plan to)	✓		✓	✓	✓			
	Reinforcing Behaviour		✓			✓		✓	
	Optimism / Pessimism	✓		✓	✓		✓	✓	
Opportunity	Environmental Context / Resources		✓			✓	✓	✓	✓
	Social Influence (influenced by others)			✓		✓	✓	✓	✓

Source: Center for Implementation

Step 5: Mapping initiatives to functions

Now that you can see what types of ‘how to’ functions align to the various barriers you may encounter, Table 2 will help you identify what types of initiatives or ‘interventions’ will be most effective in creating change, and adoption pathways.

This is not a comprehensive list of every type of initiative you can take and will evolve as new technology, research and sharing of lessons, produces new ways to engage with producers.

Table 2: Initiatives mapped to function

<p>Educating</p> <p><i>Increasing knowledge or understanding</i></p> <p>Focus is on the psychological capability of ‘understanding’</p>	<p>Apps, AI and systems</p> <p>Audit and feedback</p> <p>Case studies and reports</p> <p>Compare and share local knowledge</p> <p>Community of Practice</p> <p>Educational materials – e.g., Guides, tutorials, templates, etc</p> <p>Educational sessions – e.g., workshops, field days, farm tours, webinars, expert presentations, conference calls, conferences</p> <p>Integrating topics into meetings</p> <p>Discussion groups, chat forums, WhatsApp groups</p> <p>Knowledge Broker</p> <p>Mass media – newsletters, mailouts, advertising, radio, TV, YouTube, podcasts, social media, etc</p> <p>On-farm visit by experts e.g., agronomist</p> <p>Participative R&D</p> <p>Surveys, interviews and focus groups</p>
<p>Training</p> <p><i>Imparting skills</i></p> <p>Focus is on the physical capability of ‘doing’</p>	<p>Apps, AI and systems</p> <p>Competency based training</p> <p>Case studies and reports</p> <p>Compliance and practice support visit</p> <p>Demonstration farm/sites and training sites</p> <p>Educational materials - e.g.: Guides, tutorials, templates, etc</p> <p>Educational sessions - e.g.: workshops, field days, farm tours, webinars, expert presentations, conference calls, conferences</p> <p>Follow up visit post training</p> <p>Local opinion leaders</p> <p>Membership to exclusive groups e.g.: Mastermind, alumni</p> <p>On-farm advisory visit e.g.: agronomist, animal health specialists and biosecurity officers</p> <p>Peer to peer learning</p> <p>Provide supervision</p> <p>Specialists, mentorship and coaching</p>

	<p>Tech set-up and support</p> <p>Train the trainer</p>
<p>Training</p> <p><i>Imparting skills</i></p> <p>Focus is on the physical capability of 'doing'</p>	<p>Benchmarking</p> <p>Demonstration Farms/sites</p> <p>Model change</p> <p>Participative R&D</p> <p>Provide supervision</p> <p>Shadow other experts</p> <p>Simulate change</p> <p>Visit other sites, such as farm visits, paddock walks, field trials, or demo sites</p>
<p>Persuading</p> <p><i>Using communication to induce positive or negative feelings or stimulate action</i></p>	<p>Champions</p> <p>Engage leaders</p> <p>Facilitation</p> <p>Identify early adopters</p> <p>Implementation coaching</p> <p>Leaders supporting the change</p> <p>Local consensus process</p> <p>Mass media - newsletters, mailouts, advertising, radio, TV, YouTube, podcasts, social media, etc</p> <p>Case studies and reports</p> <p>Opinion leaders</p> <p>Public demand</p>
<p>Incentivising</p> <p><i>Creating expectation of reward</i></p>	<p>Accreditation</p> <p>Credentials</p> <p>Allocations of funds e.g.: grants, payments</p> <p>Audit and feedback</p> <p>Rebates, low interest loans and other financial instruments</p> <p>Change payment schemes or structures</p> <p>Market pricing e.g.: premium product pricing,</p> <p>Market based mechanisms e.g.: environmental markets, ecosystem services schemes, nature finance, etc</p> <p>Membership to exclusive groups e.g.: Mastermind, alumni</p> <p>Prizes and awards</p>
<p>Enabling</p> <p><i>Increasing means/reducing barriers to increase capability or opportunity</i></p>	<p>Access to experts and professionals</p> <p>Action planning</p> <p>Allocation of funds e.g.: Grants</p> <p>Apps, AI and systems</p> <p>Build a network</p> <p>Champions</p>

	<p>Community of practice</p> <p>Data sharing</p> <p>Engage leaders</p> <p>Goal Setting</p> <p>Implementation coaching</p> <p>Involve executive boards</p> <p>Leaders supporting the change</p> <p>Opinion leaders</p> <p>Problem solving</p> <p>Restructure the environment e.g.: relocate to a more accessible location</p> <p>Self-monitoring of behaviour</p> <p>Social support</p> <p>Surveys and reports</p>
<p>Environmental restructuring</p> <p><i>Changing the physical or social context</i></p>	<p>Change sites that provide service/support</p> <p>Change the physical environment</p> <p>Prompts/cues</p> <p>Record systems</p> <p>Reminders</p> <p>Revise professional roles</p>
<p>Restriction</p> <p><i>Using rules to reduce/increase the opportunity to engage in target behaviours</i></p>	<p>Buy-back schemes</p> <p>Change payment schemes or structures</p> <p>Change policies</p> <p>Develop disincentives</p> <p>Mandate Change</p>

Step 6: What next?

You have now identified the barriers your target audience or end-user may face, and the enablers that will support achieving the impact you desire. You have aligned these barriers using the COM-B and TDF model to identify the types of initiatives that will help to address the barriers, or enablers.

When engaging with farming businesses, or advisors, or other parts of the agricultural supply chain, you may also need to consider the following before you commence engagement, or even the design of your initiative:

- Who in the business makes the final decision? OR, who has the power of veto (ability to say yes or no, e.g., the bank)?
- Who else will need to have input?
- Who will use the initiative you are designing? For example, if it's a tech tool, who will use it? Is it an office tool? Or a machinery tool?

If you have a long list of barriers, focus on those that are most significant or within your control. Similarly, you may also have a long list of initiatives you could deploy. Now is the time to move to the *Pathways to Impact Framework* PREPARE stage, where you will focus on planning your program or project and will determine which initiatives are most suitable, affordable, etc.

TIP: Don't forget to consider the behavioural Insights E.A.S.T model: 4 principles for driving behaviour change easy (E), attractive (A), social (S) and timely (T).



Source: The Social Deck

Definitions

Theoretical Domain Framework (TDF)	Source: Center for Implementation
Knowledge	An awareness of the existence of something
Skills	An ability or proficiency acquired through practice
Memory, attention, and decision process	The ability to retain information, focus selectively on aspects of the environment and choose between two or more alternatives
Behaviour regulation (e.g., habits)	Anything aimed at managing or changing objectively observed or measured actions
Beliefs about capabilities (e.g., confidence)	Acceptance of the truth, reality, or validity about an ability, talent, or facility that a person can put to constructive use.
Social/Professional role/Identity	A coherent set of behaviours and displayed personal qualities of an individual in a social or work setting.
Belief about consequences	Acceptance of the truth, reality, or validity about outcomes of a behaviour in a given situation
Emotions	A complex reaction pattern, involving experiential, behavioural, and physiological elements, by which the individual attempts to deal with a personally significant matter or event
Goals (e.g. I want to)	Mental representations of outcomes or end states that an individual wants to achieve
Intentions (e.g. I plan to)	A conscious decision to perform a behaviour or a resolve to act in a certain way.
Reinforcing behaviour	Increasing the probability of a response by arranging a dependent relationship, or contingency, between the response and a given stimulus.
Optimism/Pessimism	The confidence that things will happen for the best or that desired goals will be attained or the tendency to see the worst aspect of things or believe that the worst will happen.
Environmental Context/Resources	Any circumstance of a person's situation or environment that discourages or encourages the development of skills and abilities, independence, social competence, and adaptive behaviour.
Social influences (e.g. Influenced by others)	Those interpersonal processes that can cause individuals to change their thoughts, feelings, or behaviours.

Functions	Source: Center for Implementation
Education	Increasing knowledge or understanding, with the focus on the psychological capability of 'understanding'
Training	Imparting skills, with the focus on the physical capability of 'doing'
Modelling	providing an example for people to aspire or imitate e.g.: field trials
Persuading	Using communication to induce positive or negative feelings or stimulate action
Incentivising	Creating expectation of reward
Enabling	Increasing means/reducing barriers to increase capability or opportunity
Environmental restructuring	Changing the physical or social context
Restriction	Using rules to reduce the opportunity to engage in target behaviours (or increase target behaviours by reducing opportunities to engage in competing behaviours).

Further reading

The [Center for Implementation](#) specialises in applying theory and evidence-informed change methods to improve outcomes. You will find extensive tools and resources on the COM-B and TDF models, identifying strategies and incentives and initiative adaptation. This guide has been heavily informed by the work of the Center for Implementation.

Strategic vs Tactical and Complex vs Simple – Kaine, et al 2024 authored [Strategic, tactical, complex and simple changes to farm systems](#).

The [Behaviour Change Wheel](#) provides a new method for characterising and designing behaviour change interventions.

The Behavioural Insights Team encourages the use of the [E.A.S.T Model](#) to remove friction points that will impact engagement or uptake of initiatives.

The [Social Deck](#) expands the E.A.S.T. Model to encompass community-based social marketing to leverage mixed methods when working with specific community groups.



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