

Barriers to Adoption: What stops a producer from trying a BMP?



Highlights:

- Producers must account for agronomic suitability, operational capacity, and labour availability of each BMP
- Producers are motivated by soil health improvements, yield gains, and broader contributions to environmental sustainability.
- BMP adoption is best supported by a combination of financial incentives and context specific supports.

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Adoption of BMPs on farm

The Agricultural Climate Solutions – Living Lab program aims to develop, test, and evaluate innovative technologies and farming practices to address climate change. However, it is not enough to have the solutions if they aren't being implemented on farms. To address this part of the program, a research team at Acadia University set out to determine what prevents adoption on farm.

BMP – Beneficial Management Practice

This refers to any practice that can be implemented on a farm to reach a desired outcome, whether that is improved yield or increased soil health.

Even when financial supports exist farmers may choose not to adopt a BMP if accessing the support requires excessive administrative effort, it has complex eligibility rules, or it conflicts with other funding supports. Other research has shown that more than just financial incentives impact adoption rates. Some of the non-financial factors that contribute to decision making are:

- Farmer attitude and personal capacity
- Perceived market advantages
- Compatibility with existing operations
- Access to information (e.g. extension agents)
- Environmental values
- Policy incentives
- Perceived risks



and increasing environmental health in addition to the evidence that these practices can sequester carbon and reduce greenhouse gas emissions.

The workshops showed that farmers move through a functional assessment of the farm when evaluating whether to adopt a new practice (Figure 2). This starts with an agronomic assessment to decide if the practice is right for their land under its current conditions, considering things like soil health, water retention, crop rotations, and nutrient cycling. The next step was an operational assessment to determine the capacity to take on a new project including the availability of staff and labour, an assessment of the needed equipment, the timing, and the availability of custom contractors. This was followed by a financial assessment. Other factors that can influence the decision making were considered at all steps; perceived risks, available supports, and alternative practices.

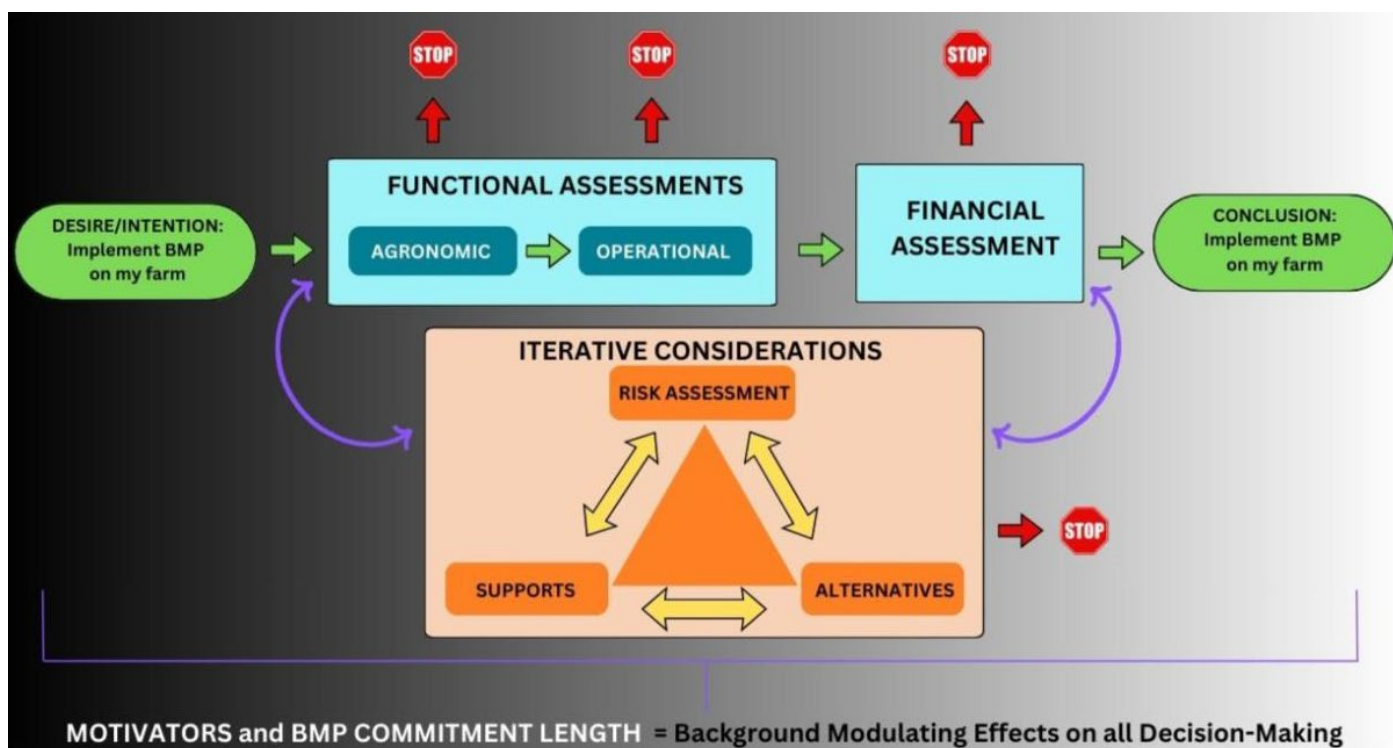


Figure 2. Map of decision-making process flow for farmers who intend to implement carbon and greenhouse gas related beneficial management practices.

The length of commitment of a BMP was a modulating effect on all decision making. For example, cover cropping (an annual commitment) was more readily considered than the longer-term, multi-year commitment of creating a riparian zone.

Mitigation strategies for each risk or barrier were discussed with the groups (Figure 3). For example, if not knowing the current state of soil health on the farm was a potential barrier, a mitigating strategy could be support for soil testing – either financial support or labour support. This is an iterative process, assessing risks at each step and mitigating against them and moving on through the decision-making process.

More established farms with more equipment, cash reserves, more staff, or experience are better placed to take on the risk of trying something new. Smaller or newer farms may need additional support to increase their adoption of new BMPs.

How Can This Research Be Used?

The complexity of decision making in agriculture highlights that many supports can be needed to increase adoption of BMPs beyond funding supports. For example, one of the recommendations of the research team is the availability of real-time soil health data to help producers identify the right BMPs for their farm.



Figure 3. Working through barriers that can prevent BMP adoption.

Cohesion and cooperation in the agricultural industry will help farmers find and implement the right BMPs. Government, commodity groups, industry organizations, agricultural extension services, nutrient management planners, and financiers all have roles to play in assisting the industry to move toward greater adoption.

Want to Learn More?

This work was undertaken by the research team of Dr. Liesel Carlsson, Dr. Edith Callaghan, and Ann Doyle Huntley at Acadia University. For any questions on this research contact Ann Doyle Huntley, at ann.doylehuntley@acadiau.ca.

Find out more about the Living Lab project at nsfa-fane.ca/livinglabs. Here you can find our other research briefs and additional information resources.

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