Digital Agriculture Tools –
Adoption Considerations

Are you considering adopting digital agriculture to improve a process on your farm? Digital agriculture is defined as **the use of digital technologies and data to improve efficiency, productivity, and sustainability in farming and other agricultural endeavours.** Whether it's hardware or software, the adoption of new tools could create value, strengthen your farm business or help manage risks. However, learning to use a new tool may take time, and the initial investment will require capital. Measuring potential costs and benefits to ensure the tool will work for your farm environment and your farm financials is key!

Assessing the Value of Adoption

A well-fitting digital ag tool could yield several positive results and increase your economic return. Data records from digital tool adoption can inform farm operations decisions, provide access to premiums or new markets, and identify trends or risks that require interventions. Adoption could reduce workloads, optimize input use, minimize environmental impacts, improve animal health and welfare, or boost your productivity. Here are some questions to ask yourself before you buy or subscribe:

- ☐ Does the tool **resolve a problem** you have? Does it create efficiencies at the farm like saving you time, cash, labour and other resources? Are there opportunity costs incurred by not adopting?
- ☐ Do you know your current **cost of production**? Will adoption increase your profitability in the long term, even if the short-term result is tighter margins or a loss?
- ☐ Will you and your existing labour pool need **training**? User information and training may be available through the service providers, on YouTube, via neighbours or local agronomists.
- ☐ Will the tool **organize, interpret, or evolve your data** to ease decision making?
- ☐ How will you **(securely) save and store the data**? Do you have sufficient digital storage on-farm or access to a cloud storage service with the right cybersecurity protections in place?
- ☐ If the tool is controlled by a smartphone or tablet, does your area have adequate internet and cellular **connectivity**? Can data consistently go from the barn, tractor or field to your home/office?
- ☐ Are you participating in a **traceability program** and does the tool help fulfill those requirements?
- ☐ Are there local, provincial or national programs or **subsidies** available to assist in adoption?
- ☐ Do the tool capabilities **match the size of your farm**? More acres or bigger herd size can spread the adoption costs, but is the tool ideal for the scale of your farm?
- ☐ Do you know anyone who adopted this tech? **Previous adopters** can be a valuable resource!
- ☐ Have you **compared** the available options and what's being developed? Some digital ag tools have been widely adopted in Manitoba, but new innovations are constantly emerging.

- For more information, contact a Farm Management Specialist
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- Toll free at 1-844-769-6224

Manitoba

Questions to ask the service provider

You've done the research and weighed the costs and benefits for your operation. You've decided you want to adopt a new tool or suite of tools.

Here are some points to review with the service provider:

- ☐ **Interoperability.** You may already have a digital agricultural ecosystem on-farm, but can the new tool integrate, or is a retrofit needed? Can the equipment be transferred to a different machine (or brand of machine)? Can the data collected be transferred to another system?
- ☐ **Initial and ongoing costs**. Are all current and ongoing costs clear (e.g. purchase costs, monthly or annual subscription fees, training charges, maintenance and calibration expenses)?
- ☐ What **purchasing options** are available – buy, lease, subscription?
- ☐ Has the tool been **tested on the farm scale** or on small plot trials or in labs only? Have the trial results been proven by **third party testers**?
- ☐ Where can you find product **reviews**? Are there other clients willing to share their experiences?
- ☐ What's involved in **calibrating** and troubleshooting the tech? Can you learn how to do that yourself?
- ☐ **After-sale support and warranty**. Is support local? Who can you call for help and what self-serve user support is available for training, diagnostics, parts, repair, and support?
- ☐ **What can go wrong, and what are the solutions**? Fog, solar flares, and other natural phenomenon can affect technology.
- ☐ Can the software **organize the data** into usable formats such as maps, or will you need the service provider to create reports or agronomic scripts?
- ☐ What are the **current legal regulations** impacting your desired use of the tool?
- ☐ What measures are being taken to protect this technology from **cyber attacks**? Where is the data stored physically, and is there risk of it being locked in a geopolitical disagreement?
- ☐ Have you asked for and reviewed the **user agreement**? Do you understand where the data is going, who owns the data and how it will be used? Information about transparency in agricultural data use is available through non-profits like [Ag Data Transparent](#) (ADT).
- ☐ Will the hardware still be usable **without a subscription** or the newest software version? What happens to the product and your data if you do not renew?
- ☐ Is this the first generation? Will the tool be obsolete when the **next version** is released?
- ☐ Is this tech in the **pre-commercialized or commercialized** phase? If the tool or version is pre-commercial, the entrepreneur or service provider may be looking for farms to test it.

Ready to adopt?

Following are the three major steps to adoption of digital agriculture tools. Ensure you know what to expect and who to call for assistance during each step:

1) installation of sensors/equipment/technology on farm and calibration
2) communication and data transfer (cellular, WIFI, Bluetooth)
3) information processing and integration