

INDEPENDENT REVIEW OF RI DATA QUALITY

Better Cotton's Results Indicator (RI) system underpins the organization's ability to measure progress against its sustainability goals

This including tracking pesticide and fertilizer use, water efficiency, yields, and gender inclusion across all programme countries. Ensuring that this data is credible and comparable is essential for maintaining stakeholder confidence and for demonstrating impact to donors, partners, and farmers alike.

Better Cotton commissioned ADC Consulting to conduct an independent audit of its Results Indicator (RI) data management system under RFP 2024-11-MEL-DATA.

The objective was to verify whether the RI data collected across all countries are accurate, traceable, and methodologically sound, and to assess how well the system aligns with international data-quality standards.

The audit reviewed the complete RI data pipeline: from data entry by Programme Partners through validation in Cotton Cloud, aggregation, and reporting through Power BI dashboards. Both Producer Unit and Large Farm data were included.

All related documentation and digital tools were examined, including Excel templates, validation macros, Power Query scripts, dashboard models, and MEL guidance materials. ADC also evaluated governance, version control, and access management arrangements to determine whether data quality is maintained throughout the process.

The work was performed between April and June 2025 and represents the first independent technical review of Better Cotton's RI data processes since the system was established.

The audit encompassed both Producer Unit (PU) and Large Farm (LF) data from nine countries, i.e., China, India, Tajikistan, Pakistan, Türkiye, Mozambique, Brazil, Australia, and the United States. The sample data included spanned seasons 2016-17 to 2023-24.

Together, these datasets collectively represent the full operational range of the Results Indicator (RI) system, from long-established smallholder programs in Asia to newer large-farm reporting frameworks in Latin America and Australia.

This breadth allowed ADC to test consistency across different governance models and maturity levels of data systems, ensuring that conclusions drawn reflect global patterns rather than country-specific practices.

Overall, ADC believes that Better Cotton's RI system is fundamentally sound.

The audit also identified a robust and traceable workflow that produces reliable data across countries and seasons, while also highlighting areas, particularly documentation and version control, where streamlining could further strengthen efficiency and scalability.

ADC'S AUDIT PROTOCOL

During this audit, ADC reviewed nine sequential steps, from field data entry to global dashboard reporting, along with four global support functions: cloud platform and security, tool use, version control, and documentation.

Data quality assessment followed different components derived from the ISO 8000 and DAMA-DMBOK frameworks. Each step was rated using a red-amber-green scale to highlight operational strengths and risks. All related documentation and digital tools were examined, including Excel templates, validation macros, Power Query scripts, dashboard models, and MEL guidance materials. ADC also evaluated governance, version control, and access-management arrangements to determine whether data quality is maintained throughout the process.

ADC found that Better Cotton's RI system performs strongly against these dimensions

Data transformations are executed in a consistent sequence, validation logic is well placed, and outputs are reproducible. ADC found that the RI pipeline enables full traceability from raw submissions to final aggregated results and that internal checks systematically flag anomalies before reporting. Country-level MEL teams demonstrated a disciplined approach to quality assurance, supported by effective exception-reporting tools and responsive follow-up mechanisms. While documentation is dispersed across multiple working files, the substantive controls governing data accuracy and completeness function reliably.

	Step	Description	RAG
Data Processing ↓	1 RI Data in Farmer Field Book	Farmers from PUs record RI data in Farmer Field Books (FFBs)	🟡
	2 RI Data in Standard BCI Template	Data entered in standard templates for analysis	🟢
	3 Gap Analysis and Input Validation	Checks performed using Excel, Power Query, and VBA macros	🟡
	Gap analysis shared with PPs	Results shared with PPs; exception report feedback obtained	🟡
	4 RI Data in FFB (farmers/FFs)	Major errors modified via PP review; minor errors corrected by MEL	🟢
	5 Data transformed and template uploaded	Data entered into template; uploaded to Cotton Cloud	🟢
	RI dashboard shared (BCI & PPs)	PowerBI dashboards created; RI analysis shared with PPs	🟢
	6 Creation of Exception Reports (MEL)	Exception reports created with SQL/PowerBI; outliers flagged	🟢
	Exception report shared (PPs)	Exception reports shared with PPs; revisions validated by PPs	🟢
	7 Data correction based on PP input	Data is corrected where invalid; new exception reports created	🟢
	8 Further "non-standard" analyses	Non-standard analyses performed; e.g., clustering and repetition	🟢
	9 Data marked as "Final"	Final data stored in Cotton Cloud; backups in MEL SharePoint	🟢
	End of season, impact, and PP reporting	Based on final data, reports are shared with stakeholders	🟡
	G1 Global Function: Cloud Platform	Basic cloud platform with responsive security protocol	🟢
	G2 Global Function: Tool Use	Semi-automated use of legacy tools. Reliable but hard to scale.	🟢
	G3 Global Function: Version Control	SharePoint-based file system involves file duplication	🟡
	G4 Global Function: Documentation	Scattered but reliable documentation	🟡

Summary Data Handling Process Figure. Red-amber-green (RAG) scores are shown on the right.

WHAT ADC FOUND

Overall assessment

Better Cotton's RI data is of high quality

The data management process is robust, transparent, and broadly compliant with international data-quality standards. Across all stages, data were found to be reliable, traceable, and reproducible. No critical weaknesses were identified. The system's core design and governance provide a solid foundation for accurate and repeatable reporting.

Review of the Data Quality Grading Methodology

ADC confirmed that the draft grading framework is conceptually sound and well aligned with ISO 8000 principles of accuracy, completeness, consistency, and traceability. It provides a clear, repeatable basis for measuring data quality across seasons and countries. Minor refinements could include adjusting weighting factors and clarifying how qualitative judgments are documented.

Strengths and Risks

Key strengths

- Validation logic and cross-field checks effectively prevent structural and logical errors
- Data can be traced from individual farmer records to final Power BI outputs.
- Cloud platform permissions and access controls are functioning and responsive.
- Tools and templates are standardised across countries, ensuring comparability.
- MEL staff demonstrate a strong quality-assurance culture and oversight capacity.

Moderate risks

- Documentation is comprehensive but scattered across multiple working papers and legacy versions. Centralising guidance in a controlled repository would improve efficiency and reduce ambiguity.
- Version control relies on manual duplication of files within SharePoint folders, creating potential for divergence as data volumes expand.
- Dependence on Excel, VBA, and Power Query limits scalability. Gradual transition to a database-driven or scripted process would increase robustness and efficiency.

Low risks

- Cloud security and infrastructure were found to be stable.
- Data integration between partner uploads, validation, and dashboards is consistent.
- Validation tools achieve low false-positive rates and perform as intended.

Recommendations

ADC recommends strengthening the current RI data system through clearer documentation, centralized version control, and modest automation of validation steps within the existing SharePoint environment. In the medium term, introducing a lightweight scripting layer (e.g., R or Python) would improve consistency and reduce manual workload. Over the longer term, transitioning to a fully integrated database platform would ensure scalability and long-term resilience as Better Cotton's data volume and country coverage continue to expand.