

REEL STANDARDS

MEL PROCESS AND DATA VALIDATION



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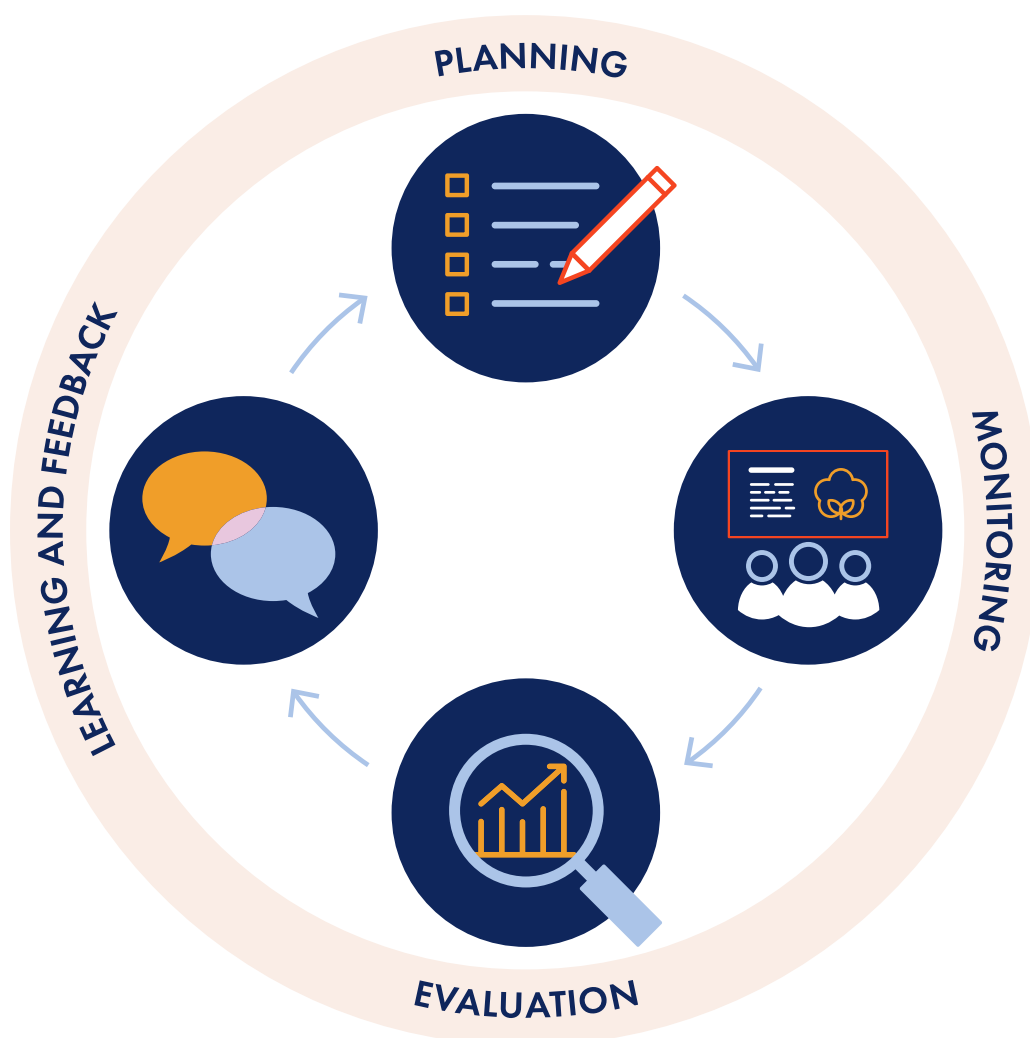
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MEL Process

This document outlines the Monitoring, Evaluation, and Learning (MEL) framework and data validation processes that support the REEL Standards. It has been developed to ensure transparency, credibility, and consistency in how performance is measured and verified across producer groups.

This document is being made publicly available to enable stakeholders—including brands, certification bodies, and implementation partners—to understand the methodologies underpinning assurance and measuring the outcomes of the Standard implementation.

The programme monitoring and evaluation of REEL Standards follows a four-stage process:





PLANNING

Based on the relevant [Theory of Change](#), for REEL Standards, and considering any add-on requirements a detailed monitoring and evaluation framework with key performance indicators (KPIs) (Refer to Annexure for a reference list of KPIs) and targets is prepared. The project team members are oriented on the Theory of Change, key performance indicators and the proposed data collection plan along with responsibilities at various levels. A baseline assessment is also carried out at this stage to identify the baseline values for relevant KPIs and also identify the needs to feed into designing the programme implementation.



MONITORING

The Farmer List serves as a comprehensive farmer profile of all registered farmers, capturing key details such as total agricultural area, cotton cultivation area, irrigation practices, and water sources. The post-sowing farmer list for a season is considered as the most reliable dataset for farmer profile related information for a specific season.

At the start of every season, in-depth training is conducted for the field executives on Farmer Field Book (FFB). Field-level data is gathered through the Farmer Field Book (FFB) at periodic intervals (sowing, water usage, application of pesticides and fertilisers, harvesting and selling etc) to analyse and track the progress against the KPIs.

For producer groups in their initial three-year progression under the standard, Farmer Field Books (FFBs) will be maintained for 100% of farmers. This comprehensive data collection ensures a strong foundation of insights into agronomic practices, input usage, and sustainability indicators, supporting tailored capacity building and close monitoring during the early phase of implementation.

For producer groups that have completed three years under the standard¹, FFB data collection will transition to a sample-based approach at the producer group level. The sampling will be designed to be statistically representative, ensuring a 95% confidence level with a 5% margin of error, allowing continued monitoring and analyse the outcomes while optimising resources.

Table 1: Sampling Methodology

Producer Group	Sample
Producer Group in Transition	100% Farmer data to be captured
Producer Group (fourth year onwards)	Sample estimated at producer group estimated at a 95% confidence level and a 5% margin of error

M&E data collection is conducted by Field Executives using standardised tools—primarily the mobile application. Hardcopy Farmer Field Books (FFBs) are used in cases where digital entry is not feasible, and both versions follow identical formats to ensure data consistency. The final data is submitted to the CottonConnect ME&L team for further evaluation. The ME&L team reviews and validates the data, and upon completion of data cleaning and validation, the information is analysed for reporting purposes.

The M&E team also conducts monitoring visits, focus group discussions, and key informant interviews with relevant stakeholders to identify issues and capture early learnings from the programme. These insights are used to inform course corrections, provide feedback to the implementation team, and support interpretation of data from the Farmer Field Books (FFBs). The data collected undergoes a three-layer verification process—at both the Local Partner and CottonConnect levels—to identify outliers and incomplete entries. In addition, external validation is carried out (refer to section Data Validation Mechanisms).

¹ This will also be applicable for farmers completed three years under the REEL Cotton or REEL Regenerative Code of Conducts and transitioned to REEL Standards.

Concurrent Monitoring by External Agencies

In the REEL Programmes, external agencies/experts are often engaged to conduct real-time assessments of programme implementation across key geographies, evaluating both compliance with standards and the quality of field-level engagement. Structured field visits are carried out during key cropping stages and stakeholder interviews, document reviews, and spot verifications of training and data collection practices are conducted. The insights not only validate the accuracy of reported outcomes but also provide actionable recommendations to strengthen programme delivery, enhance farmer engagement, and drive long-term impact.

To ensure efficient use of resources, the monitoring will cover a limited sample of farmers at the district or producer group level. This targeted approach enables focused verification of key processes such as training delivery, data accuracy, and compliance with standards, while still providing credible insights into programme performance. As a non-mandatory requirement, concurrent monitoring by external agencies/experts in the REEL Programmes will be implemented based on partner interest and resource availability.



EVALUATION

End-line assessment is conducted at the close of each season to evaluate the effectiveness, outcomes, impact, and sustainability. The outcomes and impact of the training provided at the field level is assessed based on key performance indicators (KPIs), which are calculated or derived from data captured in the Farmer Field Books (FFBs). Progress is evaluated by comparing KPI outcomes of project farmers with a control group of cotton farmers from demographically similar, non-participating villages. Control group selection follows a purposive sampling strategy to ensure comparability while minimizing bias. The aggregated findings are then correlated with the farming practices on which farmers were trained. Key findings and performance against KPIs are documented and shared with a broader group of stakeholders.



LEARNING AND FEEDBACK

The lessons learned from the implementation of the programme are systematically gathered and feedback is shared with the programme team for streamlining the programme implementation and incorporated in the M&E process flow. In addition, the key findings are also used for future project planning. The findings are also used for modification of the training plan for the next season.

As part of the feedback loop, a farmer feedback mechanism is implemented for continuous improvement at the village level. Key metrics derived from the FFB data—such as input usage, yield trends, adoption of practices, and performance against KPIs—are aggregated and shared with farmers in a simplified format. This feedback is typically provided at the village level through community meetings or during regular farmer group sessions. The objective is to help farmers understand their progress, compare performance with peers, and reinforce the benefits of adopting practices.

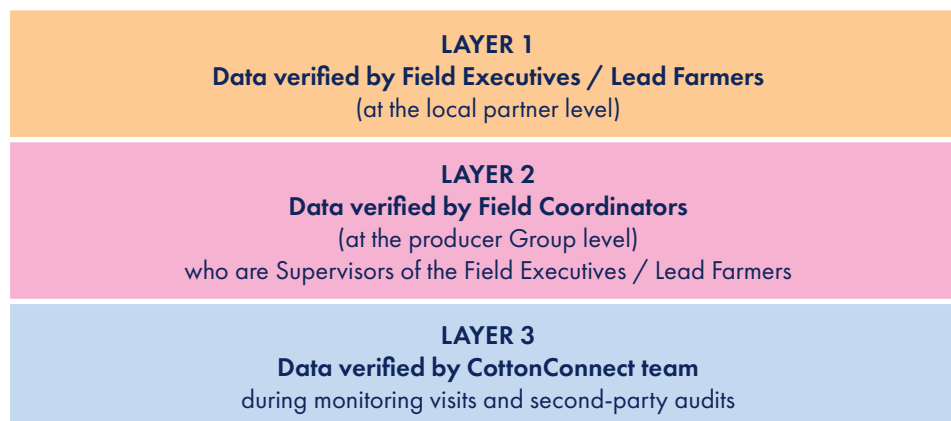


Data Validation Mechanisms



INTERNAL VALIDATION SYSTEMS

Baseline information on farmers is gathered during their enrolment into the program. Throughout the year, data is collected using the Farmer Field Book (FFB) based on various stages of farming. The collected data will be internally verified at three different layers at the Local Partner and CottonConnect level to check for any outliers or incomplete data. This set of verifications would be an ongoing process throughout the season as and when the data collection happens:



EXTERNAL DATA VALIDATION

Separate external data validation audits are undertaken with the help of third-party external agencies to verify the authenticity of data collected in endline forms (Farmer Field Book). The FFB data is also reviewed during the third-party certification process.

SYSTEM CALIBRATION

The REEL Standards are regularly updated and reviewed to ensure its effectiveness, while the MEL (Monitoring, Evaluation, and Learning) system is calibrated every three years to maintain its accuracy and relevance.



Annexure: KPIs for REEL Standards (Reference List)

Key Result Areas	Indicators	REEL	REEL Regenerative
Yields	Cotton yield (KG per Acre/Hectare)	✓	✓
Revenue & Profits	Profit from Cotton (USD per Acre/Hectare)	✓	✓
	Reduction in input costs (USD per Acre/Hectare)	✓	✓
Soil Health	Soil organic matter (optional)*		✓
	Soil Carbon levels (tons per hectare) (optional)*		✓
	Microbial activity in soil (rate of increase in microbial biomass) (optional)*		✓
	Soil parameter levels (pH, electrical conductivity (EC), Nitrogen, Phosphorous, Potassium, Soil Texture and Structure, and Soil Moisture) (optional)*		✓
	Nitrogen Use Efficiency (NUE)		✓
Agroforestry and Biodiversity	Plant diversity (number of plants per hectare, type of plants per farm)		✓
	Tree sapling regeneration rate (Saplings per ha) (optional)*		✓
	Pollinator presence in farms (optional)		
Green House Gases	Chemical Fertiliser (Kg) usage per Acre/Hectare	✓	✓
	Chemical Pesticide (ML/g) usage per Acre/Hectare	✓	✓
	Natural Fertiliser (Kg) usage per Acre/Hectare		
	Natural Pesticide (ML/g) usage per Acre/Hectare		✓
	GHG emissions (measured in CO ₂ e)	✓	✓
	Adoption of low carbon farming activities (reduced or minimum tillage)		✓
Water Management	Water usage (litres per Acre/Hectare)	✓	✓
	Water use efficiency (Liters per kg of cotton)	✓	✓
	Water crop productivity (yield per unit of water used)	✓	✓
Ecosystem Diversity	Number of different crops harvested		✓
	Adoption of intercroops, cover crops, border crops		✓
Adoption	Adoption of (locally relevant) more regenerative practices		✓
Livelihoods and well-being	Income streams per farmer		✓
	Incidence of farm injuries or morbidity cases (due to farm accidents)	✓	✓
Animal Welfare	Status of Animal welfare practices (vaccination, animal shelter, fodder and clean drinking water)		✓
	Use of Farmyard Manure (FYM)		✓
Knowledge and Awareness	Farmers demonstrating increased knowledge of agronomic issues	✓	✓
	Knowledge of social aspects with a focus on fair labour practices, child labour, and education of their children	✓	✓
Health and Safety	Usage of Personal Protection Equipment (PPE) during pesticide and fertiliser application	✓	✓
	Safe storage and disposal of pesticide bags/packs	✓	✓
Traceability and Assurance	Cotton production tracked from Farm to Ginner**	✓	✓
	Trust and Transparency in Supply Chain (Stakeholder confidence index)**	✓	✓

The above list is for reference purposes only; the actual reporting indicators may vary on the basis of requirements and availability of resources and feasibility of data collection.

* Year on year basis | ** Assessed only for project farmers | Other indicators are compared with control farmers