

Agroecology in Practice at Riverbend Farming Enterprises

45 Days of Continuous Soil Monitoring | 1 July – 14 August 2026

External Summary prepared by MyBitSecure Technologies (MBS), in partnership with Riverbend Farming Enterprises (RFE)

How to Read These Results

The Eco Score and Stage rating in this report are produced using an MBS-built monitoring framework, the Ecological Impact Index (EII). The index uses directly sensed soil pH, electrical conductivity (EC) and moisture, with soil temperature applied afterward as an adjustment to biological activity rates. Some indicators within the score, including estimated bacterial, fungal, earthworm and carbon-related indicators, are modelled from literature-based thresholds rather than measured directly through laboratory or biological testing. The EII is a consistent way to track soil condition over time between farm visits; it is a monitoring indicator, not a laboratory soil test, certification result or replacement for field judgement. The full methodology is retained in the supporting technical report.

Executive Summary

Riverbend Farming Enterprises (RFE), based in the Eastern Cape, practises organic, agroecological farming across two vegetable gardens: the Demo Garden and the Field Garden. Its approach is built around composting, careful watering and working with natural systems. This 45-day observation period used the MBS SmartFarm platform to make those existing practices visible in continuous, quantified form.

Over the period, RFE's combined Eco Score rose from 65 (Stage 3) to a sustained Stage 5 range, holding for four consecutive weeks. The soil-water retention indicator also improved over the same window, while most soil-moisture responses coincided with recorded rainfall events rather than manual watering.

These findings are an initial, evidence-based observation period, not a conclusive or standalone result: 45 days of winter monitoring does not establish seasonal or long-term outcomes.

What Was Observed

Weekly Eco Score

Week Ending	Eco Score	Stage	Observation
02 Jul	65	Stage 3	Baseline reading (monitoring start)
09 Jul	79	Stage 4	Improvement recorded
16 Jul	78	Stage 4	Stable
23 Jul	87	Stage 5	Peak reading for the period
30 Jul	83	Stage 5	Sustained, following significant rainfall
06 Aug	83	Stage 5	Sustained
13 Aug	86	Stage 5	Fourth consecutive week at Stage 5

Soil-Water Retention

A secondary indicator reflecting the soil's capacity to hold and make available moisture from rainfall rose from 55 in early July to a peak of 85 by the end of July, before easing to 70 by early August. It remained above the starting reading throughout the observation period. This is consistent with the outcome agroecological practice aims for: soil that makes better use of the water it already receives, reducing reliance on supplementary irrigation.

Rainfall vs. Manual Irrigation

RFE's watering during the period was manual, using a hose and watering cans supplied from a JoJo tank, with no automated irrigation infrastructure in either garden. Manual watering was recorded on only two occasions across the 45 days. Most soil-moisture responses coincided with recorded rainfall events, most notably more than 60 mm across 28–29 July. Continuous monitoring allowed these responses to be verified at the root zone rather than inferred from a nearby weather station.

Demo Garden vs. Field Garden

The two gardens were tracked separately. By early August, Field Garden soil moisture had risen above 50%, with salinity readings beginning to move into an elevated range; this is recorded as an indicator warranting continued observation, not as an adverse finding. Over the same period, Demo Garden salinity trended downward. The two growing areas also showed different moisture responses to rainfall events, an observed pattern warranting further investigation rather than a finding with an established cause.

Limitations

- The 45-day period was captured during winter and does not represent seasonal variation across a full annual cycle.
- The EII does not isolate or attribute which specific practice, weather event or other factor drove the improvement observed.
- This reflects one monitoring cycle at one site and should not be generalised to other farms or growing conditions.
- Where laboratory soil results are available, they take precedence over the EII for nutrient-specific or regulatory decisions.

Supporting RFE's SAOSO PGS Record-Keeping

RFE participates in the South African Organic Sector Organisation's (SAOSO) Participatory Guarantee System (PGS), which relies on farmer records, peer review and site assessment. This monitoring data provides supporting documentation alongside that process; it does not replace farmer records, peer review, site assessment or any assurance requirements. A farm visit provides a snapshot; continuous monitoring provides a record over time.

Next Steps

Continued monitoring across additional seasons, together with further per-garden data collection, will provide a fuller picture of the differences between the Demo and Field Gardens and continue to support RFE's record-keeping and visibility as a working example of agroecological practice in the Eastern Cape.

Report prepared by: MyBitSecure Technologies (Pty) Ltd ([MBS](#)), in partnership with Riverbend Farming Enterprises ([RFE](#)), in support of the South African Organic Sector Organisation ([SAOSO](#)'s) agroecological ways of working and its Participatory Guarantee System ([PGS](#)) for organic assurance.

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