KHEYTI GREENHOUSE DASHBOARD

Reporting & Interpretation Notes

(Data Changemaker Voluntary Project) - **Dashboard Link**

1. **Objective**

The purpose of this document is to:

- Explain how to interpret and use the Kheyti Greenhouse Performance Dashboard
- Clearly state data assumptions and cleaning decisions applied
- Summarize key insights derived from validated operational data

This dashboard is designed to support impact reporting, internal learning, and external stakeholder communication.

2. **Assumption Data Assumptions & Preparation**

2.1. Missing or Unassigned Values: 74 greenhouses with null or "Not Assigned" cluster/region values were excluded from the dashboard.

2.2. Region Normalization

Some states and city clusters were inconsistently assigned to multiple regions in the source data. To ensure analytical consistency:
Each location was assigned to one primary region, based on the most frequently occurring region label.
Examples of cleaning decisions:

City Cluster	Old State/Region	New State/Region
Andhra Pradesh	South + Southern Region	Southern Region
Sitapur	North + Central + Northern Region	Northern Region
Giridih	Madhya Pradesh	Jharkhand
Deoghar	Eastern Region + Northern Region	Eastern Region
Kasrawad	Uttar Pradesh	Madhya Pradesh
Chintamani	Tamil Nardu, Maharashtra	Karnataka
Sadashivapet	Jharkhand	Telangana
Banka	Jharkhand	Bihar

3. Key Insights

3.1. Overview

Regional Distribution

- Southern Region is the leading region, with 2,061 greenhouses (31%).
- Other regions show meaningful presence, indicating national-scale reach.

Users can:

- Click region buttons to filter the map
- Drill down into state- and city-level cluster analysis via:
  - Geographic map
  - Detailed tables

Top State by greenhouse count: Telangana, Madhya Pradesh, Jharkhand

Growth Trend:

- Cumulative greenhouses increased from 55 in 2018 to 6,431 by 2026.
- While cumulative growth remains strong, annual installations declined sharply in 2025, showing a 74% decrease compared to 2024.

This suggests:

- Growth momentum has slowed in new acquisitions
- Further analysis in the Farmer section helps explain retention vs. acquisition dynamics

3.2. Crop Season Analysis

Number of crops tried by season:

- Most preferable season is defined by number of crops tried.
- Season 1 crops have the highest frequency, with 4,022 crops recorded, indicating early-stage crop preference concentration.

Number of seasons by crop category:

- Crop frequency is measured by number of validated crop seasons.
- Vegetables are the most frequently grown crop category, followed by mixed crops, nursery, and leafy crops.

Average Crop Duration

- Average crop duration (in days) varies meaningfully by crop category.
- Short-cycle crops (e.g., nursery, leafy) contrast with longer-cycle vegetables and mixed crops, reflecting diversified use cases.

This highlights the greenhouse's primary role as a vegetable income-generation tool.

Geographic & Utilization Analysis

- Number of seasons by location shows crop scale across states and cities.
- Average seasons per greenhouse indicates utilization depth:

- Darker bars represent locations performing above the overall average, signaling stronger greenhouse utilization.

Crop Preferences & Seasonality

Clicking on a state or city filters the heatmap to show:

- Preferred crops by location (State/City)
- Seasonal patterns (Crop type (Category/Sub-category)

The crop frequency heatmap clearly illustrates:

- Which crops are grown in which months
- Regional differences in seasonal crop planning
- Local market and climate adaptation

3.3. Farmer Analysis

Farmer Cohort Profile

Service Delivery: Farmers are supported through both In-Person and Remote service models.

Tenure: Most farmers have a tenure of 2–3 years, indicating early-to-mid engagement stages.

Crop Season Participation

The majority of farmers have completed 1–2 crop seasons.

This presents an opportunity to:

- Increase repeat usage
- Strengthen long-term greenhouse value realization

Farmer Status & Retention

Farmers are categorized as:

- Active:
  - Active – Installed greenhouse farmer
  - Pre-installed farmer
- Inactive:
  - Given up, DNC, Removed farmers
  - Inactive
  - SO Cancelled
  - Partner/Dealer records are excluded from status grouping (no shown)

Key Insight

Active farmer rate remains above 85%, both annually and cumulatively.

Maintaining this high retention will likely require:

- Encouraging tenure extension to 4–5 years
- Continued engagement and support

Acquisition vs Retention Insight

The decline in greenhouse growth observed in the Overview tab is driven primarily by reduced new farmer acquisition, not poor retention.

This highlights the need for:

- Stronger promotion strategies
- Sponsorship or financing support
- Targeted outreach to onboard new farmers

Farmer Archetype Analysis

75% of farmers are smallholders, reinforcing inclusive impact.

Small farmers predominantly grow vegetable crops.

Landholding vs structure size analysis shows:

- Small farmers typically invest in smaller structures (~240 sqm)
- Larger farmers invest slightly more (~361 sqm), but still avoid large-scale risk

This suggests:

Farmers prefer low-risk, trial-based adoption rather than high upfront investment.

Detailed Farmer Reference

The dashboard includes a reference table listing:

- Crops tried per farmer
- Number of greenhouses owned
- Tenure duration

This supports deeper, farmer-level analysis when required.