



UPGROW RWANDA LTD

Pilot Crop Selection Strategy

Internal Strategy Document — V3 (with Review Notes)

To	From	Date	Re
Upgrow Internal Review	Michel Dusengimana — Head of Agritech & Systems Strategy	12 May 2026	Pilot Crop Selection — V3 Final Revision

1. Introduction

This document presents the final revised crop selection strategy for the Upgrow Rwanda Ltd pilot phase under the Ministry of Agriculture (MINAGRI) Memorandum of Understanding (MoU).

The purpose of this strategy is not only to identify crops that can successfully grow in aeroponic systems, but also to establish a technically and commercially viable pilot capable of:

- Generating early and stable revenue
- Utilizing both LD and HD tower infrastructure efficiently
- Testing Rwanda market demand across different customer segments
- Building operational knowledge for future scale-up
- Aligning with MINAGRI pilot commitments and investor expectations

The selected crops were evaluated using the following criteria:

- Compatibility with LD and HD aeroponic towers
- Growth cycle efficiency and turnover rate
- Rwanda local market demand
- Supermarket and HoReCa (Hotels, Restaurants, and Cafés) demand
- Export readiness and strategic value
- Yield potential under controlled environment agriculture systems
- Ability to test different operational and commercial hypotheses during the pilot phase

This revised V3 document integrates operational corrections, MoU alignment, and strategic improvements recommended during the internal V2 review.

2. Strategic Crop Selection Framework

For internal business strategy, crops are grouped according to their primary market role:

- Supermarket & HoReCa Core Crops

- Local Market Stability Crops
- High-Value Herbs
- Export Crops

However, to align with the signed MINAGRI MoU, each crop is also mapped to one of the three official reporting categories:

- Leafy Greens
- Local Herbs
- Export Crops

This dual structure ensures both operational clarity and reporting compliance.

3. Pilot Design Philosophy

The pilot is designed as a learning and validation platform, not only as a production system. The selected crops intentionally represent different risk and learning categories:

- **Safe crops:** crops with proven local demand and stable turnover
- **Medium-risk crops:** crops with higher margins but requiring stronger market coordination
- **Bold-bet crops:** crops used to test the limits of aeroponic production and export readiness in Rwanda

This approach allows Uppgrow Rwanda Ltd to generate operational knowledge while maintaining financial stability during the pilot phase.

4. Final Selected Crops for Pilot Implementation

4.1 LD Tower Crops

Crop	Tower	Growth Cycle (Days)	MoU Category	Est. Yield (kg/site/cycle)	Primary Market	Pilot Objective / What We Are Testing
Lettuce (Looseleaf / Butterhead)	LD	25–35	Leafy Greens	0.20–0.25	Supermarket	Testing stable salad demand and consistent yield performance
Arugula	LD	21–28	Export	0.10–0.15	HoReCa / Supermarket	Testing premium salad market demand and export potential
Basil (Sweet / Genovese)	LD	25–30	Export	0.15–0.20	Export / HoReCa	Testing export quality consistency and premium pricing
Parsley	LD	30–40	Local Herbs	0.10–0.15	HoReCa	Testing adoption rate within restaurant supply chains
Cherry Tomatoes	LD	60–80 (first fruit)	Export	2.0–3.0	Supermarket / Export	Testing aeroponic fruiting crop performance

Crop	Tower	Growth Cycle (Days)	MoU Category	Est. Yield (kg/site/cycle)	Primary Market	Pilot Objective / What We Are Testing
Spinach	LD	30–40	Leafy Greens	0.20–0.30	Local Market	Testing high-volume local demand stability
Mustard Greens	LD	30–40	Leafy Greens	0.20–0.30	Local Market	Testing local dietary demand and rapid turnover
Green Onions	LD	50–65	Leafy Greens	0.15–0.25	Local Market	Testing production efficiency under aeroponic conditions
Kale (Tuscan / Curly)	LD	45–60	Leafy Greens	0.25–0.35	Supermarket	Testing premium leafy green acceptance
Mint	LD	30–40	Local Herbs	0.15–0.25	HoReCa	Testing multi-harvest production potential
Dill	LD	30–40	Local Herbs	0.10–0.15	HoReCa	Testing niche premium herb demand in Rwanda
French Beans (Haricots verts)	LD	55–70	Export	0.30–0.50	Export	Testing export crop viability in aeroponic systems
Bird's Eye Chili	LD	60–80	Export	0.20–0.40	Export	Testing export quality and productivity

5. HD Tower Allocation Strategy

The V2 review correctly identified that the initial crop list did not allocate crops to HD towers.

Uppgrow Rwanda Ltd currently operates 3 HD towers with a combined capacity of 588 growing sites, representing approximately 62% of total production capacity. Since HD towers are specifically designed for microgreens and baby greens, dedicated crops are necessary to ensure full infrastructure utilization.

Selected HD Tower Crops

Crop	Tower	Growth Cycle (Days)	Est. Yield (kg/site/cycle)	Primary Market	Pilot Objective
Baby Spinach	HD	18–22	0.03–0.05	Supermarket	Testing high-density production efficiency
Baby Arugula	HD	12–16	0.03–0.05	HoReCa	Testing premium baby green demand

HD Tower Strategic Justification

HD towers will focus on high-turnover baby greens targeting premium salad markets in Kigali. These crops provide faster harvest cycles and maximize site productivity while allowing Upgrow Rwanda Ltd to test future mesclun and packaged salad opportunities.

6. Export Crop Compliance with MINAGRI MoU

The MINAGRI MoU requires the pilot to test a minimum of five export-oriented crop varieties during Year 1. The revised export crop list is therefore:

- Basil
- Cherry Tomatoes
- French Beans (Haricots verts)
- Bird's Eye Chili
- Bell Pepper (Phase 2 introduction)

This adjustment ensures full compliance with the signed agreement while maintaining operational feasibility.

7. Justification for Newly Added Crops

Parsley

Parsley was selected due to its consistent demand in restaurants, supermarkets, and hospitality supply chains. Its role as a garnish and culinary herb provides stable market absorption throughout the year.

Mustard Greens

Mustard greens were included because they align strongly with local dietary preferences and demonstrate reliable market demand in Rwanda. Their fast production cycle also supports stable cash flow during the pilot phase.

Dill

Dill was selected as a niche but premium herb targeting higher-value restaurant and hospitality markets. Including dill allows the pilot to test specialty herb demand and market diversification opportunities.

8. Justification for Removed or Reduced Crops

Swiss Chard

Swiss chard was removed due to relatively low local market demand and slower turnover compared to stronger-performing leafy greens.

Strawberries

Strawberries were removed from the priority pilot list because of local market saturation and their comparatively longer maturity period.

Romaine Lettuce

Romaine lettuce remains in limited testing but with reduced strategic emphasis to avoid unnecessary duplication within the lettuce category.

9. Maturity Period Validation

A technical review of all selected crops confirmed that the maturity periods in the original crop reference guide are generally accurate and suitable for operational planning.

One important correction identified during review:

- Green onions perform more efficiently within 50–65 days under aeroponic conditions rather than the originally estimated 60–70 days.

This adjustment has been integrated into the revised crop table.

10. Strategic Pilot Implementation Approach

Phase 1 — System Stabilization

Focus crops: Lettuce, Spinach, Herbs, Baby Greens

Objective: Generate early cash flow, stabilize operational systems, and build market relationships.

Phase 2 — Value Expansion

Focus crops: Cherry Tomatoes, Bell Peppers, French Beans, Bird's Eye Chili

Objective: Increase value per site and expand premium and export market testing.

Phase 3 — Scale & Export Readiness

Focus: Export compliance, production standardization, supply chain development

Objective: Position Upgrow Rwanda Ltd for scalable commercial production in Rwanda and abroad.

11. Closing Statement and Target Outcome

This revised V3 crop strategy provides a balanced and pilot-ready production portfolio integrating:

- Fast-cycle crops for immediate cash flow
- Staple crops for local market stability
- Premium crops for supermarket and HoReCa positioning
- Export crops for long-term scale and foreign revenue generation

The strategy also ensures:

- Full utilization of LD and HD tower infrastructure
- Compliance with MINAGRI MoU commitments
- Alignment with Rwanda market realities
- A structured learning-oriented pilot framework

The primary objective of this pilot is to establish Upgrow Rwanda Ltd as a technically capable and commercially reliable supplier of premium aeroponic produce for both domestic and export markets.

Prepared by Michel Dusengimana — Head of Agritech & Systems Strategy



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Appendix A — Pre-Meeting Review Notes

From Kenny to Michel | Not for external distribution

To	From	Date	Re
Michel Dusengimana — Head of Agritech & Systems Strategy	Kenny Rubaduka — Founder & CEO	12 May 2026	V3 Review — Items to Address Before Meeting

A.1. Acknowledgment

Michel — strong work on V3. You closed every item we asked for in V2 (HD allocation, export count to 5, MoU category column, justifications for added and removed crops, the "what we're testing" line, yield estimates, tower allocation). That is real engineering of feedback into a stronger document.

Your thought process and explanations are kept in this document exactly as you wrote them — the safe / medium / bold tiering (Section 3), the dual category mapping (Section 2), the phased rollout (Section 10), and the maturity-period correction on green onions (Section 9) are all yours.

Four items below are open for your judgment before our meeting. None require rewriting the document — they are clarifications that turn V3 from a strong strategy into a decision-ready pilot plan.

A.2. Items to Address Before the Meeting

Item 1 — Resolve the Arugula vs. Bell Pepper export inconsistency (Most Important)

Observation: In Section 4 (LD Tower Crops table), Arugula is tagged *Export* in the MoU Category column. But in Section 6 (Export Crop Compliance), the five export crops listed are Basil, Cherry Tomatoes, French Beans, Bird's Eye Chili, and Bell Pepper — Arugula is not on this list. Bell Pepper is also flagged as "Phase 2 introduction," yet it counts toward Year 1 MoU compliance.

Why it matters: MINAGRI will compare our reported export crops against the MoU commitment. If Section 4 says we have six export-tagged crops and Section 6 lists five — including one not yet planted — that's a question we'd rather resolve before they ask.

What we need from you in V3.1: Pick one of the three options below:

- (a) Keep Arugula as Export in the table, drop Bell Pepper from the Year 1 export list, and bring Bell Pepper in formally during Phase 2.
- (b) Re-tag Arugula as Leafy Greens in the table, and commit Bell Pepper to Year 1 planting (move it out of Phase 2).
- (c) Keep Arugula as Export and Bell Pepper in the Year 1 list — but explicitly state in Section 6 that the Year 1 export portfolio is six varieties, with Bell Pepper as the late-phase entrant.

Recommendation: Option (a) is the cleanest. It preserves your crop list, honors the MoU minimum of five, and removes the Phase-2-but-counts-in-Year-1 ambiguity. Your call — you're closer to the agronomics.

Item 2 — Sharpen the "What We Are Testing" column from descriptive to measurable

Observation: You added the testing column we asked for in V2. Many of the entries, however, are descriptive rather than testable. "Testing stable salad demand and consistent yield performance" doesn't have a pass/fail condition.

Why it matters: A pilot is for proving or killing hypotheses. If we can't write down what "success" looks like in numbers, we'll spend month 6 arguing about whether each crop "worked."

What we need from you in V3.1: For each crop, add one number — yield threshold, price point, cycle time, or sell-through rate — that we'd consider the success bar. Example for Lettuce: "Deliver ≥ 0.22 kg/site at a 28-day cycle; sustain $\geq X$ RWF/kg sell-through at Kigali Heights or La Galette." Your expert estimate is enough — we can refine later.

Item 3 — Add a sites-per-crop allocation

Observation: V3 lists 15 crops across 952 sites but does not say how many sites each crop gets. The phased rollout in Section 10 helps, but it doesn't give us the per-crop split.

Why it matters: Without site allocation, V3 is a menu of approved crops — not yet a planting plan. Operationally we cannot order seed, plan labor, or model output until we know the allocation.

What we need from you in V3.1: Either inside Section 4 or as a new sub-section, add a column or short table showing your proposed site count per crop. A rough split is fine for V3 — the precision will come from operations.

Item 4 — Add annualized output (Optional but high-value)

Observation: The yield column gives kg/site/cycle. For executive review and any investor conversation, we need kg/site/year (sites \times cycles/year \times yield) and ideally an estimated revenue per site at expected Kigali market prices.

Why it matters: Portfolio allocation decisions — which crops to expand, which to drop —

require annualized numbers. We can't compare a 25-day lettuce cycle to an 80-day cherry tomato cycle without it.

What we need from you in V3.1: If feasible before the meeting, add the annualized columns. If not, we can park this and treat the meeting as a strategy alignment rather than a final allocation lock.

A.3. Closing

Michel, this is the next layer of detail — not a critique of the work. You delivered everything V2 asked for and added strategic framing we did not ask for (the safe/medium/bold tiering, the phased rollout). That goes in the keep column for every future document.

If anything above is unclear or you disagree with a recommendation, push back before the meeting. We trust your agriculture judgment — these items are framing and clarity, not science.

Look forward to the discussion.

Kenny Rubaduka

Founder & CEO, Upgrow Rwanda Ltd