UPGROW RWANDA LTD

Sustainable Growth Powered by Innovation

Master Strategy

+ System Blueprint

Version 1.0

Prepared by Kenny Rubaduka, Founder & CEO

May 2026 · Confidential

Kinyinya, Gasabo, Kigali, Rwanda · Reg. No. 134202981

Master Strategy + System Blueprint

Version 1.0 — Confidential

Document owner: Kenny Rubaduka, Founder & CEO **Prepared for:** Upgrow leadership (Terry Ntwari, Bailey Flint, Linda Uwase, Michel Dusengimana, Olivier) **Effective date:** May 2026 **Review cadence:** Quarterly. Major revisions only after pilot data lands.

This is the canonical Upgrow Rwanda Ltd strategy document. Every other Upgrow document — financial model, pilot SOPs, MoUs, pitch deck, partner agreements, operations manual — derives from this one. If a downstream document conflicts with this one, this document wins until formally amended.

0. How to read this document

This is not a pitch deck. It is the operating thesis of the company.

Read it slowly. The language is deliberately unromantic. We are not building a "vertical farming startup" in the Silicon Valley sense. We are building a distributed food production infrastructure network in Rwanda — one that will be valued by acquirers and lenders for predictability, not for hype.

When the document uses cautious or conservative language, that is a feature, not a bug. We will not over-promise. We will systematically replace assumptions in this document with measured pilot data over the next 6–12 months, and version 2.0 of this document will be re-anchored to that data before any major capital raise.

1. Executive summary

Upgrow Rwanda Ltd (registered 134202981, Kinyinya, Gasabo, Kigali) is a Rwandan controlled-environment agriculture (CEA) company. It uses commercial aeroponic towers — deployed inside a tiered network of farmer-hosted net-houses and Upgrow-owned climate-controlled greenhouses — to build a predictable, contract-based food production system in Rwanda.

The company is not a farm. It is a distributed food production network and supply reliability solution for Rwanda's hotels, supermarkets, restaurants, and institutional buyers.

The pilot phase, anchored by a signed Memorandum of Understanding with Rwanda's Ministry of Agriculture and Animal Resources (MINAGRI) and aligned with the country's Strategic Plan for

Agriculture Transformation, Phase 5 (PSTA 5), is intentionally capital-light. Its purpose is to generate verified yield, cost, and offtake data — not immediate profit.

The company's long-term thesis: agricultural infrastructure in East Africa is fragmented, unreliable, and seasonally volatile. The buyer who controls *predictability of supply* — not the lowest price — wins the high-margin lanes (hotels, premium retail, export). Upgrow becomes more valuable as it becomes more predictable, not just larger.

A realistic ten-year horizon takes Upgrow from a single 30-tower pilot to a network of approximately 340 farmer-owned net-houses and 50 Upgrow-owned CEA greenhouses across Rwanda — a regional infrastructure company supplying organized retail and hospitality, not a basket-trader competing with Kimironko market.

---

2. Company definition — what Upgrow is and is not

What Upgrow Rwanda Ltd IS:

- A controlled-environment agriculture company using aeroponic tower technology under a tiered network model.
- A distributed food production system that aggregates output from many small, standardized production nodes.
- A supply reliability solution for hotels, supermarkets, and institutional buyers in Kigali and, ultimately, regional East Africa.
- A scalable agricultural infrastructure business — designed from day one to be replicable across cities and countries with minimal redesign.
- A data-generating production network. Each tower, each greenhouse, each farmer node produces operational data that compounds into a defensible advantage.

What Upgrow Rwanda Ltd is NOT:

- It is not a single farm. The unit of value is the network, not any one site.
- It is not a tower-sales business. Towers are infrastructure; revenue comes from produce supply contracts, not equipment resale.
- It is not a premium-export-only play. Domestic Kigali offtake comes first; export is Phase 3.
- It is not a Silicon Valley "agritech" company. Margins, valuation logic, and timelines are anchored in Rwandan and East African economic reality, not US/EU SaaS multiples.
- It is not founder-dependent at scale. Every role designed today is built to scale into a department or regional structure, with operations independent of the founder by Stage B.

The product, stated in one sentence:

> QUOTE
> *A predictable, contracted, year-round supply of high-value fresh produce, replacing fragmented and seasonal agriculture in Rwanda's premium and institutional channels.*

Towers are not the product. Greenhouses are not the product. **Predictability is the product.**

---

3. Strategic philosophy — the four pillars

These four principles govern every decision the company makes. They are intentionally restrictive. When in doubt, default to them.

3.1 Reliability over pricing

The early-stage win is not premium pricing. It is consistency of supply at a price that matches or slightly undercuts the local market. Premium pricing is something we *earn* — and earn modestly — after we have demonstrated, with months of evidence, that we deliver something the spot market cannot.

There are two equally valid entry strategies, and the leadership team will choose between them per channel and per crop:

- **Match local market price** — win on reliability, consistency, and traceability. The buyer pays the same as they would at Nyabugogo, but receives clean, sized, packed produce, on schedule, every week, all year. This is the default for established hotel and supermarket relationships where reliability is the binding constraint.
- **Slightly undercut market** — acquire first anchor clients with a discount that creates the cashflow needed to validate the operation. This is the default for new-channel entry where Upgrow has no track record.

Once 6–12 months of unbroken supply has been established with an anchor buyer, we move to a *justified* premium — typically a **1.5–3× markup over local market wholesale for commodity SKUs** (lettuce, kale) and a **1.5–2× markup for already-premium SKUs** (basil, mint, strawberries). This is not the retail markup a supermarket charges its end consumer. It is the B2B-supply markup that hotels and organized retailers willingly pay for produce they don't have to think about. Anything more aggressive is wishful thinking and will not survive a procurement renewal.

The premium we charge must always be defensible against five concrete things the buyer is paying for. We document this in section 5.5 below.

3.2 Cashflow-first scaling

Every tower deployed must contribute to:

- Real revenue from a specific buyer.
- A repeatable demand pattern (weekly or biweekly orders).
- An identified, named relationship with someone whose phone number Upgrow has.

We will not over-expand without demand contracts. The temptation to chase tower count for the sake of tower count is the single biggest failure mode in agritech, and we will treat it as such. A tower without a buyer is a sunk cost. A buyer without enough towers is a missed quarter — but recoverable.

3.3 Replicability

The end goal is not size. The goal is a system that can be copied: from Kimironko to other Kigali sites, then to secondary Rwandan cities (Musanze, Huye, Rubavu), then to regional East African capitals, with minimal redesign.

This implies that everything we build during the pilot — site layout, SOPs, training programs, supply chain protocols, pricing rubrics, contract templates — must be documented as if a stranger will set up the next site without our help. If a process lives only in someone's head, it doesn't yet exist for the company. The Agritech Operations Lead (Olivier) and Head of Agritech (Michel) jointly own this documentation discipline during the pilot.

3.4 Contracted demand beats spot sales

Valuation increases — by acquirers, lenders, and grant funders — when supermarkets, hotels, and institutional buyers replace informal market traders in the revenue mix. A contracted weekly hotel offtake worth USD 800/month is worth more, on a multiple basis, than the same revenue from a basket of informal vendors.

The Chief Strategic Officer (Bailey Flint) owns the conversion of any informal offtake into formal contracts as soon as a relationship has 90 days of consistent volume. The CEO (Rubaduka) signs every multi-year contract personally during the pilot phase, with the Financial Director (Linda Uwase) reviewing financial terms and the COO (Terry Ntwari) signing off on operational deliverability.

---

4. The Network Model — land, partnership, and the three deployment archetypes

This is the core operating system of Upgrow Rwanda Ltd. It replaces a simple "tower count" framing with a structured production network that uses farmer-contributed land as the foundation, deployed in

one of three infrastructure archetypes selected on a per-site, per-crop basis. The farmer-and-people's-land model is not a side feature; it is the company's distribution moat. The right-sized infrastructure choice is the company's CAPEX discipline.

4.1 The fundamental insight — Agrotonomy towers are designed to work outdoors

The towers themselves are weatherproof, UV-stabilized food-grade plastic, with closed-loop nutrient delivery. Agrotonomy installations operate in the open across Africa, Europe, and the Americas. **The greenhouse is not part of the tower; it is an addition to the tower, justified only when the* crop *demands it.**

This single fact reframes the company's CAPEX strategy:

- For local-acclimated crops (lettuce, kale, mint, basil, hardy local varieties) in Kigali's mild 18–27°C year-round climate, all that is required is **land, security, water, and power** — not a greenhouse.
- For pest-sensitive or fruiting crops (premium tomatoes, peppers, cucumbers, exotic herb varieties), a **passive-protection net-house** is the right level of investment.
- Only for foreign and temperature-sensitive crops (day-neutral strawberries, raspberries, off-season specialty herbs) does a **polycarbonate climate-managed greenhouse** become necessary.

The CAPEX delta between these three archetypes is roughly 1× : 2× : 5× — meaning the wrong choice can quintuple the cost of a site for no production benefit. Right-sizing the infrastructure to the crop is the most leveraged decision the company makes per site.

4.1.1 Tower inventory — what we actually have, and what that means

The pilot uses ten Agrotonomy commercial aeroponic towers, but they are **not all the same**. They split into two formats which we will refer to throughout this document as **LD (low-density)** and **HD (high-density)** towers.

Format	Count	Plant sites per tower	Total plant sites	Approx. footprint per tower
LD — 52-plant tower	7	52	364	~3–4 m²
HD — 196-plant tower	3	196	588	~10–15 m²
Pilot total	10	mixed	**952 plant sites**	~55–75 m²

Three points follow from this immediately, and they correct simplifications carried forward from the earlier draft of this document.

First, "tower count" is a misleading unit on its own. A 196-plant HD tower carries roughly four times the plant sites of a 52-plant LD tower, so it generates roughly four times the revenue at the same per-plant pricing. Going forward this document, the financial model, and any external communication will additionally express network capacity in **plant-sites** alongside tower counts. Plant-sites is the unit that makes economics comparable across tower formats.

Second, the per-tower revenue and CAPEX numbers in the earlier draft of this document and in the existing Unit Economics workbook v1.0 were anchored on a notional 36-plant tower (the standard Agrotonomy 2.1 m commercial unit). For the actual pilot inventory:

- LD 52-plant tower revenue/CAPEX runs roughly **1.4× the 36-plant baseline** (52/36 plant-site ratio).
- HD 196-plant tower revenue/CAPEX runs roughly **5.4× the 36-plant baseline** (196/36 plant-site ratio).
- The financial model has been re-anchored on **plant-sites** as the fundamental unit; tower-count summaries in the master strategy and downstream materials are now produced from plant-site economics, not from a notional standard tower.

Third, the pilot CAPEX figure of USD 35,000–44,000 (carried in the Pilot business plan and confirmed by the founder) is correct as-stated because it was built directly off the actual shipment cost of the heterogeneous tower mix — it was never derived from the per-tower assumption. That number stands. Per-tower CAPEX figures elsewhere in this document apply only to a notional 36-plant standard tower and should be read as illustrative.

4.1.2 Why this document originally used 30-tower blocks — and why we are softening that assumption

The 30-tower block (~150 m²) baseline that appears in the Unit Economics workbook v1.0 and in the earlier draft of this document was an inherited planning estimate, not a measured site. It assumed: (a) standard 36-plant Agrotonomy towers, (b) ~5 m² per tower including aisles, and (c) a single concentrated production unit per site. It was useful for early modelling, but it does not reflect the operational reality of the pilot or the strategic flexibility the three-archetype model unlocks.

The corrected planning logic, applied throughout the rest of section 4, is:

- **Open-air sites should NOT be fixed at 30 towers.** With no greenhouse fixed cost to amortize, open-air sites can be any size from ~20 to ~200 towers each. Many small distributed mini-sites are usually better than one big concentrated site, because they spread risk, fit closer to multiple farmer partners (lower travel time), and tolerate land that comes in irregular parcels.

- **Net-house sites have a small structural fixed cost** (USD 8,500–10,500 per 150 m² shell) and benefit from moderate concentration, but can also flex between ~20 and ~100 towers per site.
- **CEA polycarbonate greenhouse sites should concentrate towers heavily.** The CFGET 153 m² greenhouse costs ~USD 19,000–22,000 landed and installed, and that fixed cost is the same whether you put 30 towers in it or 100. The right move is to fit as many towers as the greenhouse can hold without overcrowding — likely **50–100 HD-equivalent towers per greenhouse** at scale, not 30. For the pilot's 153 m² CFGET option, a denser configuration is preferable to leaving the structure under-populated.

4.2 The three deployment archetypes — sized to the use case, not to a fixed block

There is **no single correct site size**. The right size depends on the archetype, the available land parcel, and the local distribution logic. The three archetypes below describe the *infrastructure*; the size of any given site is a planning decision made per opportunity.

Archetype 1 — Open-air / fenced (lowest CAPEX, default for local crops, flexible site size)

A simple fenced enclosure on farmer-contributed land. Towers stand on poured concrete footings or compacted murram pads. Light shade cloth (50–70% UV) is optional and removable. Water is fed from an on-site tank; nutrients are dosed through a small dedicated cabinet. Power is grid + small UPS for pumps.

This archetype is the *default* for any crop that grows well in Kigali's open conditions: butterhead lettuce (with shade cloth in dry season), kale, mint, hardy local greens, basil (with limited cool-season protection). The towers do all the work the buyer is paying for; the infrastructure is just security, water, and power.

Site sizing for Archetype 1 is flexible from ~20 to ~200 towers per site. Because there is no greenhouse to amortize, the company should default to **many small distributed mini-sites** rather than one big concentrated site:

- 20–50 towers per site is excellent for spreading risk across multiple farmer partners.
- 50–100 towers per site fits where one trusted farmer has the right amount of land.
- 100–200 towers in one place only if there is a clear logistical reason (e.g. proximity to a major customer, or a single very large land parcel).

Per-site CAPEX scales roughly linearly with tower count: **USD 80–120 per LD-tower-equivalent in infrastructure** (fence, water tank, pads, hookups), plus the towers themselves and dosing. For a notional 30-tower open-air block: ~USD 4,500–6,500 in infrastructure plus the towers. For a 50-tower site: ~USD 7,000–10,000 infrastructure. The point is the pattern, not any single number.

Archetype 2 — Net-house (mid CAPEX, passive protection)

A galvanized steel-frame tunnel structure with UV-stabilized greenhouse film roof and 50-mesh insect-grade netting on the sides, with roll-up vents. No active climate control; the structure protects from heavy rain, wind damage, hail, and most pest pressure. Temperature is buffered modestly but not actively managed.

This archetype is appropriate for premium tomato, capsicum, cucumber, premium lettuce varieties (where pest exclusion improves grade-A marketable yield), and herb crops where consistency matters for hotel-supply contracts. It is *not* required for any crop the open-air archetype already grows well.

Site sizing for Archetype 2 is moderate from ~20 to ~100 towers per site. Net-houses scale up to around 300–500 m² before fabrication and ventilation get awkward, so most net-house sites will sit in the 30–80 tower range. Per-site CAPEX is roughly **USD 8,500–10,500 in net-house infrastructure** (for ~150 m² of net-house) plus towers and dosing.

Archetype 3 — Polycarbonate greenhouse with passive climate control (high CAPEX, foreign-crop justified, concentrate towers)

A galvanized steel-frame Gothic-arch structure with 8 mm twin-wall polycarbonate cladding, motorized top ventilation windows, an internal motorized sunshade screen (65% shade), and a circulation fan. This is the spec quoted to Upgrow by CFGET (Sichuan, China) in March 2026 at **USD 7,519 EXW China for 153.6 m² (USD 48.95/m²)**, with structure rated to a 20-year service life and film/screen consumables on a 3-year cycle.

Crucially, this is *not* a pad-and-fan evaporative-cooling CEA. Pad-and-fan is overkill for Kigali's mild climate; the CFGET spec achieves the temperature, humidity, and pest control needed for foreign and premium crops through passive ventilation + thermal screen, at less than half the cost of a true climate-controlled CEA.

Site sizing for Archetype 3 is the opposite of Archetype 1: concentrate as many towers as the greenhouse can comfortably hold. The greenhouse infrastructure cost (~USD 19,000–22,000 landed and installed for a 153 m² CFGET shell) is fixed regardless of how many towers go inside it. Putting only 30 towers in a 153 m² greenhouse leaves capital under-utilised; densifying to 50–100 towers per greenhouse spreads that fixed cost across more revenue-producing units. At scale, the right design is to size each greenhouse to ~80–120 LD-tower-equivalents or ~30–50 HD-tower-equivalents.

Per-greenhouse CAPEX: **USD 19,000–22,000 in infrastructure** (landed CFGET + foundations + install + electrical + buffer) regardless of tower count, plus the cost of however many towers you put inside it.

Implication for pilot site (306 m² of land available): if the CFGET greenhouse is ordered, it occupies 153 m² (half the parcel). The remaining ~153 m² of land is free to host **outdoor (Archetype 1) towers** — making the pilot a natural side-by-side test of Archetype 1 (outdoor) and Archetype 3 (greenhouse) on the same site, with the same operator team. This is a feature, not a sizing problem.

4.3 Site mix and the right-sizing principle

At any given network scale, the mix of archetypes is set by the *crop portfolio*, not by ambition. The discipline is to default to Archetype 1 unless a specific crop on the site's planned mix requires Archetype 2 or 3.

A working planning ratio for the first 100–200-tower scale, based on a portfolio that is roughly 40% lettuce + 25% basil + 15% mint + 15% strawberries + 5% rotational testing:

- **Archetype 1 — open-air**: ~70% of plant-sites (lettuce, mint, basil in warm season, hardy testing crops). Distributed across 4–8 mini-sites of 20–50 towers each.
- **Archetype 2 — net-house**: ~20% of plant-sites (basil cool-season, premium lettuce variants, fruiting test crops). 1–2 sites of 30–80 towers each.
- **Archetype 3 — polycarbonate greenhouse**: ~10% of plant-sites (strawberries, premium herb cultivars, off-season production). 1 concentrated site at 50–100 towers per greenhouse.

This 70/20/10 ratio is the working planning anchor. It will move with measured pilot results: if strawberry economics outperform, the ratio slides toward 60/30/10; if premium volume crops are the breadwinners, it slides toward 80/15/5.

A note on plant-sites vs tower-count. Because Upgrow's actual tower inventory mixes 52-plant LD towers and 196-plant HD towers, "tower count" is no longer a good unit for the archetype mix. The 70/20/10 ratio above is interpreted as **percentage of plant-sites**, not percentage of physical tower units. If a single HD tower lives on an Archetype 3 site and produces 196 plant-sites of premium output, that one tower already represents the full Archetype-3 plant-site share of a 200-tower-equivalent network at standard 36-plant baseline.

4.4 The land model — a deliberate two-phase strategy

Land is the strategic input. The farmer-and-people's-land model — the long-term distribution moat — is intentionally **Phase 2**. We do not deploy it on Day 1. We deploy it only after we have proven, with our own operations, that the production system actually works at scale.

The reasoning is simple. Asking farmers to host an unproven operator on their land is an unfair offer and an unstable partnership: failure on any site costs the farmer trust we cannot easily recover. By contrast, asking farmers to host a *proven* operator with a documented production track record at 500 towers across multiple sites is an attractive offer. The farmer is joining a working machine, not an experiment.

This translates into two distinct phases of land strategy.

Phase 1 — Upgrow-leased and Upgrow-operated land (0 → 500 towers)

Through the first ~500 towers, Upgrow leases all production land directly under its own name (emphyteutic lease, Rwanda's Law N° 27/2021), hires its own farm operators as employees, and

operates every site under SOPs owned by the Head of Agritech and the Agritech Operations Lead. There is no farmer-counterparty revenue share at this phase. Land cost is a direct lease line item; labor is direct payroll.

This phase is sized to the scaling stages described in section 6: pilot → 100 → 200 → 500 towers. Its purpose is not to maximize tower count cheaply; it is to *perfect the playbook* — yields, cycle timing, disease management, harvest scheduling, packing, cold-chain, customer fulfillment — under Upgrow's full operational control. By the end of Phase 1 we have measured economics on every crop, in three deployment archetypes, across multiple Kigali and secondary-Rwanda sites.

Phase 2 — Farmer-partnership network (500+ towers)

Once the Phase-1 playbook is proven and documented, the company opens the farmer-and-people's-land partnership model. The pitch to a prospective farmer is now a hard sell rather than a soft one: Upgrow can show measured yields, real customer contracts, working SOPs, and reference farmers who have already partnered. New sites are built on farmer-contributed land under one of two formal structures:

- **Structure A — Revenue share with buyback.** Upgrow funds the full site CAPEX (towers + Archetype-1 or Archetype-2 infrastructure) on the farmer's land. Gross revenue is split 50/50 with the farmer until Upgrow recovers 2× original CAPEX. After that, the infrastructure transfers to the farmer; Upgrow continues as input supplier and offtake aggregator, capturing a smaller margin on those activities for the structure's remaining useful life.
- **Structure B — Land lease + employed operator.** Where Upgrow needs tight control of premium-crop production (Archetype 3 polycarbonate greenhouse for strawberries or specialty herbs), Upgrow owns the asset and leases land from the farmer-host at a small monthly fee. The farmer operates the site as a salaried Upgrow employee with a yield bonus.

Phase-2 onboarding is governed by the playbook produced in Phase 1: a farmer-recruitment template, due diligence checklist, signed cooperation agreement vetted by counsel, and a standardized site build-out specification. The first Phase-2 sites in 2031 forward should look operationally identical to the proven Phase-1 sites, with the only delta being the land structure.

4.5 The flagship partnership — the Hybrid Farm (a Phase-2 product)

The flagship Phase-2 deployment, designed for committed farmer partners with 2–3 hectares of contiguous land, is a Hybrid Farm: one polycarbonate greenhouse (Archetype 3) + two open-air or net-house production blocks (Archetype 1 or 2) on the same farmer's land.

The farmer in this configuration earns:

- A monthly base salary as the greenhouse operator (Structure B for the greenhouse).
- A yield bonus based on greenhouse performance.

- A small monthly land-lease fee for the greenhouse footprint.
- 50% revenue share on each of the two open-air or net-house blocks during the buyback period (Structure A).
- Full ownership of those two production blocks post-buyback.

The total monthly farmer income at steady state — modeled but not yet measured — is a meaningful multiple of the average Rwandan smallholder farm income (~USD 100/month). This is the partnership story that wins farmer adoption, MINAGRI alignment, and grant funding. We do not lead with this model in 2026 or 2027 because we cannot yet defend the numbers from measured experience. We earn the right to lead with it by 2031.

4.6 Why this two-phase model is the moat

A pure Upgrow-owned model in perpetuity would require Upgrow to lease land at scale forever — a slow, capital-intensive constraint that caps growth. A pure tower-sale-to-farmers model on Day 1 would have no quality control, no consistent supply, no equity in the production network, and unhappy farmers when the unproven system fails on their land.

The two-phase model solves both problems. Phase 1 builds the operational and reputational asset (a working production playbook + measured economics + customer contracts). Phase 2 deploys that asset across a much larger network of farmer-contributed land, where Upgrow controls quality, supply consistency, and offtake aggregation, and farmers contribute the scarce input (land + local presence + labor) and capture meaningful long-term wealth.

The model fits Rwandan policy and cooperative law cleanly. Where Phase 2 partners through a registered farmer cooperative, the MoU's "gradual disengagement after 5 years" principle aligns naturally with the Structure-A buyback period, after which the cooperative owns its productive assets and Upgrow continues as supply chain partner rather than landlord.

4.7 Land tenure structure

Under Rwanda's Law N° 27/2021 of 10/06/2021 on Land, an emphyteutic lease (functionally near-ownership) can run up to 99 years for agricultural land. A Rwandan-registered company like Upgrow is a domestic legal person and may hold such leases directly.

In Phase 1 (0–500 towers), Upgrow signs direct emphyteutic leases for each production site under its own name, with terms long enough to support a 5–10 year operating horizon per site. In Phase 2 (500+ towers), farmer-contributed land is most cleanly structured as a sub-lease or revenue-share agreement: the farmer (or their cooperative) retains underlying title; Upgrow holds a defined operating right over the specific footprint of the production block.

All such agreements must be reviewed by Rwandan legal counsel before execution. Until that review is complete, the placeholder lease assumption in the financial model (USD 0.10/m²/month) is provisional.

5. Baseline unit economics

Every figure in this section is a model assumption built from regional benchmark research, not from measured Upgrow pilot data. The pilot's primary purpose is to replace these assumptions with measured numbers. Until that happens, conservatism is mandatory.

The reference USD:RWF rate for all calculations is **1,400 RWF/USD** (April 2026). All capital costs are inclusive of CIF Kigali shipping and duty unless otherwise noted.

5.1 Per-unit CAPEX, anchored on real quotes

The CAPEX table below shows the three-archetype build-out cost for the standard 30-tower production block (~150 m² footprint), with the polycarbonate greenhouse line anchored on the CFGET 16×9.6 m quotation received by Upgrow in March 2026 (USD 7,519 EXW China, 153.6 m², USD 48.95/m² EXW). Volume discount on tower units (Agrotonomy bulk pricing) applies at 100+ towers (7%), 300+ (10%), 1,000+ (15%).

Component	Cost (USD)	Source / note
Aeroponic tower, 36-plant, ex-factory Memphis	$560	Agrotonomy 2024–2025 published rate
Shipping + duty per tower to Kigali (volume)	~$300	Pilot shipment was higher; expect to fall with order size
Irrigation + dosing system per 30-tower block	$2,000	Agrotonomy auto delivery
Commissioning + training per site	$1,500	First-cycle technical support
Towers + dosing per 30-tower block (sub-total)	**~$28,000**	30 × ($830 CIF + Irrigation/commissioning)
Plus Archetype 1 (open-air + fence): infrastructure	**+$4,500–6,500**	Fence, shade cloth, foundations, water tank, hookups
Plus Archetype 2 (net-house):	**+$8,500–10,500**	Galvanized frame tunnel, UV film,

Component	Cost (USD)	Source / note
infrastructure		insect-grade mesh, vents, foundations
Plus Archetype 3 (CFGET polycarbonate greenhouse): infrastructure	**+$19,000–22,000**	EXW $7,519 + ocean freight (~$2,000) + Mombasa-Kigali (~$4,500) + clearance + Kigali install + foundations + buffer

Total CAPEX, fully installed, per 30-tower production block:

Archetype	Infrastructure	Towers + dosing	Total
Archetype 1 — open-air + fence	$4,500–6,500	$28,000	**~$32,500–34,500**
Archetype 2 — net-house	$8,500–10,500	$28,000	**~$36,500–38,500**
Archetype 3 — polycarbonate greenhouse (CFGET)	$19,000–22,000	$28,000	**~$47,000–50,000**

For the 10-tower pilot (~50 m² footprint), the build-out cost is roughly:

- Towers (10) + dosing + commissioning: ~$11,000
- Archetype 1 infrastructure (pilot scale): ~$1,500–2,500
- **Pilot total: ~$12,500–13,500** if open-air; ~$16,000–17,000 if net-house; ~$21,500–24,000 if polycarbonate greenhouse.

The pilot's actual CAPEX depends on which archetype the Head of Agritech and CEO select for crop validation. The recommended pilot configuration is **open-air with a small adjacent net-house module** for side-by-side comparison of Archetypes 1 and 2 across crop varieties.

5.2 Per-unit OPEX (steady state, 30-tower site, monthly)

OPEX during Phase 1 (0–500 towers, Upgrow-leased land + Upgrow-employed operators) is shown below. Phase-2 economics (farmer-partnership sites) will substitute the operator salary line for a

revenue-share split, materially altering the unit numbers — that model is detailed in the Phase-2 financial sub-model when Phase 1 nears completion.

Line item	Archetype 1 (open-air)	Archetype 2 (net-house)	Archetype 3 (polycarb greenhouse)	Note
Farm operator (1 person, employee)	$180/mo	$180/mo	$180/mo	Above Anker 2025 Rural Rwanda living wage ($166)
Shared agronomist allocation	$60/mo	$60/mo	$60/mo	One agronomist per ~10 sites
Nutrients (30 towers × $1.80)	$54/mo	$54/mo	$54/mo	Agrotonomy nutrient kits, Rwanda-adjusted
Seedlings (30 towers × $3 × 0.9 cycles)	$81/mo	$81/mo	$81/mo	Nursery-grown
Water (30 towers × ~1.4 m^3/yr ÷ 12)	$3/mo	$3/mo	$3/mo	WASAC commercial rate
Pump electricity (30 towers × 0.216 kWh/day)	$25/mo	$25/mo	$25/mo	Commercial tariff
Ventilation + screen motors electricity	n/a	$5/mo	$20–30/mo	CFGET top-vent + sunshade motors are 0.75 kW each, intermittent duty
Maintenance + consumables	$30/mo	$50/mo	$70/mo	Replacement parts; greenhouse film/screen on 3-yr cycle
Insurance (4% of annual revenue)	varies	varies	varies	UAP/SONARWA East Africa benchmark

Line item	Archetype 1 (open-air)	Archetype 2 (net-house)	Archetype 3 (polycarb greenhouse)	Note
Land lease (Phase 1)	$15–25/mo	$15–25/mo	$15–25/mo	Direct lease to Upgrow; placeholder pending counsel review
Operator yield bonus	10% of net rev above target	10% of net rev above target	12% of net rev above target	Aligns operator to output
Estimated total monthly OPEX	**~$465–500**	**~$485–520**	**~$525–570**	Excludes insurance and yield bonus

5.3 Per-tower and per-plant-site revenue bands — grounded, defensible, and conservative

The earlier strategy framing of USD 30–120 per tower per month was directionally correct but skewed optimistic *and* implicitly assumed a notional 36-plant tower. With Upgrow's actual mix of 52-plant (LD) and 196-plant (HD) towers, the per-tower band depends on which tower format you're talking about. The cleaner unit is **revenue per plant-site per month**, which is invariant to tower format and lets us reconcile the LD and HD numbers cleanly.

After grounding against measured CEA yield benchmarks, Rwanda B2B (not retail) pricing tiers, and a defensible premium-markup structure, the realistic band is the following.

Per plant-site (the format-invariant unit):

Channel mix	USD / plant-site / month	USD / plant-site / year
Open-air, mixed local market only	$0.50–0.90	$6.00–10.80
Open-air, mixed local + early premium offtake	$0.70–1.25	$8.40–15.00
Net-house / Greenhouse, premium-led portfolio (steady state)	$1.10–2.10	$13.20–25.20
Aspirational ceiling (basil-heavy	up to $2.50	up to $30.00

Channel mix	USD / plant-site / month	USD / plant-site / year
greenhouse, full Year-3+ ramp, all-premium offtake)		

Per tower at LD format (52 plant-sites/tower):

Channel mix	$/tower/month	$/tower/year
Open-air, mixed local market only	$26–47	$310–560
Open-air, mixed local + early premium offtake	$36–65	$440–780
Net-house / Greenhouse, premium-led portfolio	$57–110	$690–1,310
Aspirational ceiling	up to $130	up to $1,560

Per tower at HD format (196 plant-sites/tower):

Channel mix	$/tower/month	$/tower/year
Open-air, mixed local market only	$98–176	$1,180–2,120
Open-air, mixed local + early premium offtake	$137–245	$1,650–2,940
Net-house / Greenhouse, premium-led portfolio	$216–412	$2,590–4,940
Aspirational ceiling	up to $490	up to $5,880

Reading guide. The HD-tower numbers look dramatically larger than the LD-tower numbers because each HD tower contains roughly four times the plant-sites — a 196-plant HD tower is essentially 3.77 LD towers stacked into one physical unit. Per plant-site, the economics are identical. Use the per-plant-site band for any comparison across tower formats; use the per-tower band only when discussing a specific physical tower count.

The headline planning anchor for investor and partner conversations is **USD 0.85–1.65 per plant-site per month at steady state for a balanced network** — roughly USD 10–20 per plant-site per year. The aspirational ceiling exists in the model so that we can show what is *possible* under best-case execution, but no business case should depend on hitting it.

For the pilot specifically (7 LD + 3 HD = 952 plant-sites): at the steady-state mid-band of USD 1.20 per plant-site per month, total pilot revenue would be roughly **USD 1,140/month or USD 13,700/year** at full ramp — useful to anchor expectations against the USD 35,000–44,000 pilot CAPEX.

5.4 Placeholder crop selection — with realistic premium pricing

Pending pilot validation, the financial model is anchored on four placeholder crops chosen for the ratio of tower-friendliness × Rwanda B2B-pricing spread × hotel/restaurant demand × storage tolerance.

The local-tier price is the Kimironko/Nyabugogo wholesale rate. The premium-tier price is the **defensible B2B hotel/supermarket-supply rate** — *not* the supermarket retail sticker price. The markup over local is 1.5–3× for commodity SKUs and 1.5–2× for specialty SKUs. This is what hotels and organized retailers actually pay a contracted supplier for clean, packed, year-round produce.

Crop	Annual kg/tower	Local-tier $/kg	Premium-tier B2B $/kg	Premium markup	Local $/tower/yr	Premium $/tower/yr
Butterhead / romaine lettuce	~80 kg (≈400 heads)	$0.14/head ($0.70/kg)	$0.40–0.55/head ($2.00–2.75/kg)	2.9–3.9× per head[1]	$56	$160–220
Sweet basil	~60 kg	$5.71/kg	$8.50–11.00/kg	1.5–1.9×	$343	$510–660
Mint	~45 kg	$4.29/kg	$6.50–8.50/kg	1.5–2×	$193	$290–380
Strawberries (day-neutral)	~25 kg (Tier 2 only)	$2.50/kg	$4.00–5.50/kg	1.6–2.2×	$63	$100–140

[1] The lettuce markup is at the wide end of the commodity-SKU range because premium butterhead and romaine are functionally a different product than the generic local lettuce sold at Kimironko (typically a low-spec local variety, often with bolting and uneven heads). Roughly half of the butterhead/romaine

markup reflects the variety upgrade itself; the remainder reflects Upgrow's reliability and consistency premium described in section 5.5.

A blended Year-2 portfolio at the 40/25/15/15/5 split (lettuce/basil/mint/strawberries/rotational testing) lands at approximately **USD 250–340/tower/year** at premium-tier pricing — which sits comfortably inside the revised "Tier-1 + early premium offtake" band of USD 300–540/tower/year (closer to the floor of that band, which is the prudent place to be). With Tier-2 climate-control yield uplift of ~1.40× applied to CEA sites, the same portfolio reaches **USD 350–475/tower/year** — inside the "Tier-2 CEA premium-led" band of USD 480–900.

These numbers are deliberately at the lower end of theoretically achievable. We will replace them with measured pilot data — and only then revise upward, only if the data supports it.

Cherry tomatoes and coriander remain explicitly excluded from placeholders: cherry tomatoes are a vining crop better suited to Dutch-bucket hydroponics than vertical aeroponic towers, and coriander has a short shelf life and bolts under Kigali heat without robust climate control. Both are candidates for future SKU expansion once the pilot proves system stability.

5.5 What the buyer is paying for — how the premium is justified

A premium price requires a premium offer. Anyone can claim "high quality." The premium we charge over local market wholesale must be defensible against five concrete deliverables the buyer is paying for. If we cannot demonstrate any one of these on a given week, the premium is not earned.

1. **Reliability — guaranteed weekly volume, year-round.** The Kigali fresh-produce spot market sees 30–50% seasonal price spikes, supply gaps during dry/rainy transitions, and unpredictable quality from middlemen. Hotels and supermarkets accept sub-optimal pricing in calm seasons in exchange for *not having to scramble* during the volatile months. We sign contracts with named weekly volumes and price escalators tied to a transparent index, and we deliver on those volumes 52 weeks a year. This alone is worth a 50–100% premium over the spot market on most leafy greens.
2. **Consistency — same size, same colour, same texture, every delivery.** Chefs build menus and supermarket buyers build shelves around the assumption that what arrives this week looks like what arrived last week. Aeroponic CEA produces a uniform product because the inputs are uniform; spot-market produce does not. Consistency reduces the buyer's prep waste, simplifies plating, and protects their margin. This is worth a further 15–30% on its own.
3. **Quality and food safety — pesticide-free, soilless, traceable.** No soil-borne pathogens (E. coli, Salmonella). No pesticide residue on leaves bound for raw-salad use. Traceable to the specific tower and harvest cycle, which is increasingly required by hotel-group food-safety policies and supermarket S-Mark/HACCP-aligned procurement. For a premium hotel, the legal and

reputational risk reduction alone justifies the price. Strawberries and herbs in particular benefit; both are eaten unwashed or lightly rinsed.

4. **Convenience — pre-washed, pre-packed, cold-chain delivered to the kitchen door.** The buyer's alternative is a procurement officer driving to Nyabugogo at dawn, sorting through baskets, negotiating, transporting, washing, sorting again. Our delivery is a standing weekly order in graded, labelled, chef-ready packs. Procurement-time saved is real money, and it is one of the loudest complaints the disclosed Radisson Blu Kigali F&V data point captures: *"keeping up with quality standards and quantities is a challenge."*
5. **Shelf life and waste reduction.** Aeroponic produce harvested same-day or day-before delivery shows 3–5 days more shelf life than spot-market produce that has already passed through 2–3 hands. For supermarkets, this directly reduces shrinkage; for hotels, it reduces F&B waste. Kigali supermarkets routinely lose 15–25% of fresh greens to spoilage; cutting that to 5–10% is worth a measurable premium per kilo.

The combination of these five — not any single one — is what justifies the 1.5–3× markup over local market wholesale. The procurement conversation has to be framed in these terms, not in terms of "we are premium." Every contract template will explicitly tie pricing to delivery on these five, and the COO and Head of Agritech will jointly own the operational discipline that keeps the premium defensible week after week.

---

6. Scaling stages

The five stages below are the company's organizing timeline. Stage transitions are gated by *evidence*, not by quarters. We do not move from one stage to the next by calendar; we move when operational, financial, and contract evidence justify it. The first four stages are **Phase 1 — Upgrow-owned and operated**. Stage 5 onward is **Phase 2 — farmer-partnership network**, deployed only after the Phase-1 playbook is proven.

Stage 0 — Pilot (now, 2026)

- **Scale:** 1 site, 10 towers (mix of 7 LD 52-plant + 3 HD 196-plant = 952 plant-sites), Kimironko (Kinyinya, Gasabo). Pilot land parcel: **306 m²**.
- **Archetype configuration:** Hybrid by design. The 306 m² parcel comfortably accommodates the 10-tower production footprint (~55–75 m²) with substantial headroom. **Recommended deployment**: a portion of the towers in Archetype 1 (open-air with light shade cloth and security fence) on one section of the parcel, and — if the CFGET 153 m² polycarbonate greenhouse is ordered — the remaining towers in Archetype 3 (greenhouse) on the other section. This gives Upgrow a side-by-side comparison of open-air vs greenhouse production with the same crop

varieties, the same operator team, and the same week-by-week growing conditions. The leftover land (~120–150 m² uncovered) is reserved for future expansion or a small adjacent net-house module if Archetype 2 needs to be tested.

- **Capital:** USD 35,000–44,000 fully installed (founder-confirmed against the actual tower shipment cost). The lower end of this range applies if the pilot stays open-air-only; the upper end if the CFGET greenhouse option is exercised. Funded by founder contribution + private investment.
- **Team:** 7-person leadership and field team (see Section 11).
- **Goal:** Generate 6–12 months of measured yield, cost, and offtake data across 15+ crop varieties in two (or three) deployment archetypes. Validate per-plant-site economics — *not* just per-tower — for the four placeholder crops, and produce calibrated yield numbers separately for LD 52-plant and HD 196-plant tower formats. Establish the first 2–3 anchor customer relationships (one hotel, one supermarket, one restaurant or institution). Document every recurring task as an SOP from Day 1.
- **Definition of success:** A 90-day stretch of unbroken weekly supply to at least one anchor customer at agreed volume, with documented yield, cost-to-produce, and gross margin per crop *per tower format*. SOPs in place for every recurring task. Three-archetype CAPEX/OPEX validated against measured numbers. Plant-site-level economics replace the inherited 36-plant baseline assumptions.

Stage 1 — First scale-up (10 → 100 towers, est. 2027)

- **Scale:** 3–4 Upgrow-operated sites in the Kigali metro. ~100 towers cumulative.
- **Archetype mix:** Default 70/20/10 (open-air / net-house / polycarbonate greenhouse). Adjusted up or down based on Stage-0 measured data.
- **Goal:** Prove that the Stage-0 playbook can be replicated to a second, third, and fourth site without operational degradation. Bring on the first dedicated farm operators as employees. Validate that one Head of Agritech and one Agritech Operations Lead can supervise a 4-site network.
- **Revenue range:** USD 25,000–60,000/year at the lower end of operations (Year-1 ramp), expanding to USD 50,000–110,000/year at full ramp.
- **Net margin:** 8–18% during the scale-up — this stage is not yet meaningfully profitable; the discipline is to grow the operational base without burning through capital. Net income is reinvested.
- **Valuation range:** USD 200K–800K, driven less by revenue multiple and more by demonstrated operational reliability and named contracts.
- **Key risks:** Founder over-extension, operational inconsistency across sites, single-point-of-failure on Head of Agritech, supplier concentration (Agrotonomy lead times, RICA permit delays).

- **Stage exit gate:** All 4 sites operating with ≥80% on-time-in-full delivery for two consecutive quarters; ≥3 multi-year supply contracts; documented SOPs covering 100% of recurring tasks; second-site build executed without CEO physically present.

Stage 2 — Production perfection at 200 towers (100 → 200 towers, est. 2028)

- **Scale:** 6–8 Upgrow-operated sites within Kigali metro. ~200 towers cumulative.
- **Goal:** *Perfect* the production. This is the stage where every weakness in the playbook surfaces and is fixed. Achieve a steady-state operation where the founder is no longer needed for daily decisions, and where the customer base has diversified enough to weather the loss of any single account. By the end of Stage 2, Upgrow has a reproducible, documented operating system fit for export to other locations.
- **Revenue range:** USD 70,000–145,000/year at full ramp, depending on Stage-1 contract performance and crop-mix tuning.
- **Net margin:** 18–28% as production matures and bulk discount on tower units (≥7% from 100+) kicks in.
- **Valuation range:** USD 600K–2M, anchored on operational maturity, contract portfolio depth, and an emerging dataset that has commercial value.
- **Key risks:** Customer concentration if one anchor is >40% of revenue; operational complexity overwhelming a 7-person team; Kigali land cost escalation.
- **Stage exit gate:** Operations run for 90 consecutive days without CEO operational involvement; no single customer >35% of revenue; the Head of Agritech delegates daily decisions to Olivier; a second-city scoping study is complete.

Stage 3 — Multi-location Rwanda (200 → 500 towers, est. 2029–2030)

- **Scale:** 15–20 Upgrow-operated sites across multiple Rwandan locations: Kigali metro, Musanze, Huye, Rubavu, possibly Bugesera. ~500 towers cumulative.
- **Goal:** Validate that the Kigali playbook ports cleanly to a second and third Rwandan city. Establish a Kigali-based aggregation/cold-chain hub serving multi-site harvest pooling. Stand up the first dedicated regional manager role. Approach Ireme Invest / BRD for the first significant debt facility against an operating asset base.
- **Revenue range:** USD 180,000–360,000/year in Stage-3 mid-ramp; USD 350,000–600,000/year if every site reaches Year-3 maturity simultaneously (unlikely — a more realistic Stage-3 close is the lower-mid band).
- **Net margin:** 22–35%. Margin expansion comes from bulk tower discounts (10% at 300+), shared services amortization (one agronomist per ~10 sites), and a growing premium channel mix.

- **Valuation range:** USD 1.2M–3.5M baseline. USD 3.5M–5M upside if a portfolio of strong contracts (Simba Supermarket, Marriott or Serena Group, an institutional buyer) is in place and the multi-city replication has been clean.
- **Key risks:** Geographic spread overwhelming the central operations team; cold-chain logistics costs erasing margin; currency depreciation widening the gap between USD-denominated CAPEX and RWF-denominated revenue.
- **Stage exit gate:** Three Rwandan cities with operating sites; aggregation hub operational; Phase-2 farmer recruitment template complete and counsel-vetted; first Ireme Invest debt facility documented; Phase-2 launch readiness review approved by leadership.

Stage 4 — Phase 2 launch: Farmer Network (500 → 1,500 towers, est. 2031–2033)

- **Scale:** Stage-3 base of ~500 Upgrow-operated towers + an additional 500–1,000 towers across farmer-partnership sites (Structures A and B from Section 4.4).
- **Goal:** Open the farmer-and-people's-land partnership model. Onboard the first 10–20 farmer partners using the proven playbook. Begin the Hybrid Farm flagship deployments. Move from Upgrow-owned-everything to a hybrid network where ~30–50% of new towers are on farmer-contributed land.
- **Revenue range:** USD 400,000–1.1M/year as the farmer network spins up alongside the existing Upgrow-operated base. Mix-shift dynamics — farmer revenue share reduces Upgrow's per-site take but the network grows much faster than Upgrow could grow alone.
- **Net margin:** 25–38% on the Upgrow-operated base; 15–25% blended once the farmer-partnership sites enter Year 1 of buyback period (their net contribution is lower during buyback but recurring).
- **Valuation range:** USD 3M–8M baseline with a mature contract portfolio and clean Phase-2 onboarding execution. USD 8M–12M upside if a strategic partner emerges.
- **Key value drivers:** Successful Phase-2 farmer-partnership unit economics; expanding institutional-buyer base; data-product monetization beginning; export pilot lanes opened via NAEB.

Stage 5 — Regional infrastructure (1,500+ towers, est. 2033+)

- **Scale:** 1,500+ towers across Rwanda + a first cross-border site (Bujumbura, Bukavu, Goma, or Kampala). Mix of Upgrow-operated flagship sites and farmer-partnership network sites.
- **Goal:** Cement Upgrow as East African food-supply infrastructure. Build the export lane for greenhouse-grown strawberries and herbs to Gulf and EU buyers via NAEB's HACCP-certified packing house. Position for strategic acquisition or strategic partnership.
- **Revenue range:** USD 1.2M–3M+/year at full Year-3 maturity of each new cohort, scaling further as the cross-border footprint matures.

- **Valuation range:** USD 8M–20M+ as a strategic acquisition target for regional food conglomerates, sovereign-backed agriculture funds, or hospitality groups vertically integrating their supply chain.

Stage transition discipline

A common failure pattern in agritech is to commit later-stage capital before earlier-stage evidence has landed. We will not do that. The Financial Director (Linda Uwase) tracks stage-readiness against the gate criteria above and reports quarterly. The CSO (Bailey Flint) will not raise capital for stage *n+1* until stage *n* gates are verifiably closed. Most importantly, **Phase 2 (farmer network) does not launch before the Stage-3 exit gate is met** — no farmer partner is invited onto the network until Upgrow has operated 500 towers across 3 Rwandan cities for at least one full season.

---

7. Value drivers — what actually moves valuation

Upgrow's valuation depends more on structure than on size. A 50-tower operation with three multi-year supermarket contracts, documented SOPs, and a delegated operations team is worth meaningfully more than a 200-tower operation selling spot at Kimironko. The drivers below are the levers that compound value.

1. Contract strength. Long-term offtake agreements with named institutional buyers, weighted toward supermarkets and hotels, with predictable monthly volumes and price escalators tied to a transparent index. Each new multi-year contract adds disproportionately to enterprise value.

2. Operational reliability. Consistent harvest cycles, low pump and cycle-failure rates, predictable weekly output. We will track on-time-in-full as the single most important operational KPI from Stage A onward.

3. System independence from the founder. Operations run without the CEO. Trained farm operators and field technicians manage daily production. The Head of Agritech and the Agritech Operations Lead jointly own production excellence; the COO owns organizational execution; the CEO becomes a strategic and capital-allocation role rather than an operational one. Documented SOPs for every recurring task are the precondition.

4. Replication potential. Each new site is set up using a standardized deployment playbook. The first site to be deployed entirely without the founder physically present is the milestone that defines Upgrow as an infrastructure company rather than a single project.

5. Data depth. Every tower, every cycle, every harvest is logged. Over 2–3 years this dataset becomes a defensible asset: yield models per crop and per site, cost-to-produce curves, demand forecasting,

optimal seedling staggering. This data is also the basis for any future tower-financing or insurance product Upgrow may layer on.

6. Government and policy alignment. The MINAGRI MoU, alignment with PSTA 5, participation in the Agriculture Sector Working Group, and inclusion in Ireme Invest pipelines together form a *regulatory moat* that is durable and difficult for unfunded competitors to replicate quickly.

---

8. Regulatory and compliance landscape

A summary of the live regulatory environment, with implications for Upgrow's operations and capital strategy. Detailed legal review by Rwandan counsel is mandatory before any contract or asset purchase decision is final.

8.1 Investment and tax incentives (RDB)

Upgrow operates under Rwanda's Law N° 006/2021 of 05/02/2021 on Investment Promotion and Facilitation. Realistic incentives for the company's stage:

- 50% accelerated depreciation in Year 1 for agro-processing investments above USD 100,000 — likely accessible at Stage A.
- Preferential CIT rates if export turnover ratios are met: 25% if 30–50% of turnover is exported, 15% if ≥50%. Tier-2 strawberry/herb export is the path to qualifying.
- Standard CIT for Rwanda is 28% (reduced from 30% in 2025; medium-term policy target is 20%).
- Free profit repatriation; exemption from import duty on industrial inputs in priority sectors.
- The 7-year CIT holiday for USD 50M+ investments is out of reach until Stage C.

8.2 Land tenure (Law N° 27/2021)

Emphyteutic agricultural lease up to 99 years is available to a Rwandan-registered company. Subdivision of agricultural land below 1 hectare is restricted. Farmer land contributions are structured as sub-leases or revenue-share agreements rather than transfers of underlying title.

8.3 Production and input licensing (RICA / RAB)

A Seed Producer License is required if Upgrow propagates seedlings (RWF 10,000 fee, 14-day processing). Imported seeds require a Plant Importation Permit with phytosanitary conditions. Nutrient solutions require RICA registration before import; budget for 2–6 weeks of clearance, especially during Stage A.

8.4 Food safety (RSB)

Rwanda's HACCP-based food-safety standard is RS 184. RSB administers HACCP, FSMS, and S-Mark certification schemes. For supermarket and hotel supply, S-Mark / FSMS is the practical baseline. HACCP is required for export. Upgrow will pursue S-Mark certification during Stage A and HACCP during early Stage B.

8.5 Export pathway (NAEB)

NAEB issues horticulture export licenses and operates Rwanda's only HACCP-certified public packing house for fresh fruits and vegetables. RICA's RALIS unit issues phytosanitary certificates per shipment. EU exports require MRL compliance, traceability, and cold-chain. Gulf markets require GSO conformity, less stringent on MRLs. Export is a Stage C strategic option, not a Stage A requirement.

8.6 PSTA 5 alignment (2024–2029)

PSTA 5 is Rwanda's USD ~5.12B agriculture transformation plan. Upgrow's pilot maps directly to:

- Pillar 1 (58% of budget): modernization, urban farming, modern inputs, water-use efficiency.
- Pillar 2 (17%): inclusive markets and post-harvest management — cold-chain leafy greens to Kigali hotels.
- Pillar 3 (24%): research, extension, digital technology — Upgrow's data layer and IoT-instrumented towers.

The MoU with MINAGRI is the formal statement of this alignment and the basis for Upgrow's participation in the Agriculture Sector Working Group.

8.7 Cooperatives (Law N° 024/2021)

Where Upgrow partners with a registered farmer cooperative, the Rwanda Cooperative Agency administers registration (minimum 10 members; legal personality issued in 2 working days). The MoU's "gradual disengagement after 5 years" is a contractual principle, not a statutory obligation; it dovetails with the Tier-1 net-house buyback period and is the natural exit ramp.

8.8 VAT, customs, and duties

VAT is 18% standard. Unprocessed agricultural products and agricultural inputs (seeds, fertilizers, pesticides) are VAT-exempt. EAC Common External Tariff classifies greenhouse and aeroponic equipment as capital goods at 0% duty. Specific exemptions exist for inputs used in agricultural-equipment manufacturing — relevant if Upgrow ever localizes tower fabrication.

9. Financing strategy

The company's financing strategy is staged to avoid premature dilution and to use the right instrument at the right time.

Pilot (Stage 0): Founder contribution and private investment in the USD 35,000–44,000 range. Direct equity at this stage is the most expensive form of capital and we use it sparingly. Founder commitment is signaled by zero CEO/COO salary during the pilot.

Stage A (validation): First serious external capital. The leading instruments to pursue, in priority order:

- Ireme Invest Project Preparation Facility (FONERWA-managed grants and TA from ideation to bankability) — non-dilutive, ideal for Stage 0–A transition.
- Ireme Invest Credit Facility (BRD-managed): up to 12-year tenor, fixed 12% interest, partial credit guarantee. Anchored against Tier-2 CEA assets once a few are operating.
- AgriTech4Rwanda Innovation Challenge or equivalent grants: small-ticket but credibility-building.
- Strategic angel or impact-aligned equity for the gap that debt cannot fill.

Stage B (scale): Larger debt facility against the operating asset base, plus targeted strategic equity from a partner who adds operational lift (cold chain, retail relationships, regional distribution). Avoid generic "agritech VC" capital that pushes for hype valuations and unrealistic growth.

Stage C (regional): A combination of project finance for site rollouts, sovereign-backed agriculture funds, and potentially a strategic minority investment from a regional food group. The strategic acquisition path opens here.

The Financial Director (Linda Uwase) is the working owner of the capital plan and the primary point of contact for Ireme Invest, BRD, and grant agencies. The CSO (Bailey Flint) leads investor and strategic partner conversations. The CEO (Rubaduka) is accountable for final capital decisions and remains the signing authority.

---

10. Buyer landscape and offtake strategy

Rwanda's premium fresh-produce demand is concentrated and accessible.

Hotels. Approximately 504 hotels in Rwanda; ~54 in Kigali; ~35–45 in the 4-star+ tier. A single 4-star/5-star property uses approximately 40–80 kg of leafy greens and 5–15 kg of herbs weekly. The disclosed Radisson Blu Kigali fruit-and-vegetable monthly spend is RWF 15–18M (~USD 10,700–12,900) — a single hotel's F&V budget can underwrite multiple Tier-2 sites once a contract is signed. Sector-wide Kigali F&V hotel spend is estimated at USD 250,000–500,000/month.

Supermarkets. Simba Supermarket, Sawa Citi, La Galette, Carrefour, RwandaMart, MIGRO, and similar organized retailers are concentrated in Kigali. Supermarket retail prices are 3–5× local-market wholesale; the contracted-supply opportunity sits between, with consistency and pre-packing as the value-add.

Restaurants. Approximately 648 restaurants in Rwanda, with the highest-margin opportunity in expat-leaning and hotel-restaurant venues. Restaurants are typically lower-volume but higher-margin and more flexible on premium varieties.

Institutional buyers. Hospitals, schools, embassies, government catering. Lower per-unit margin but larger and more contractually stable. A target for Stage B once production reliability is proven.

Export. Phase 3 only. EU and Gulf strawberry and herb premiums justify the certification investment, but only when domestic offtake is fully covered.

The first-12-month offtake target is conservative and named: one anchor hotel, one anchor supermarket chain, one anchor expat restaurant or institutional buyer. The CSO and CEO co-own this list.

11. Team and organizational structure

Upgrow is currently a 7-person company. Each role is designed to scale into a department head or regional lead as the company moves through the stages.

Role	Person	Type	Reports to	Key mandate
CEO & Founder	Kenny Rubaduka	Full-time	—	Vision, fundraising, partnerships, final authority
COO	Terry Ntwari	Contract (signed 09/04/2026)	CEO	Operational efficiency, team coordination, agritech division oversight
CSO	Bailey Flint	Contract (signed 09/04/2026)	CEO	Capital strategy, investor relations, partnerships, international expansion (remote, strategic)

Role	Person	Type	Reports to	Key mandate
Financial Director	Linda Uwase	Part-time (pilot)	CEO	Cash flow, investor reporting, financial planning, capital plan ownership
Head of Agritech & Systems Strategy	Michel Dusengimana	Part-time (pilot)	COO	Crop strategy, system design, SOP approval, stakeholder credibility
Agritech Operations Lead	Olivier	Part-time (pilot)	COO (via Michel)	SOPs, farmer training, crop research, daily ops, data collection
Smallholder Farmer	TBD	Part-time (pilot)	Michel + Olivier	Tower maintenance, harvesting, daily monitoring, data input

Reporting lines. The CEO sets strategic direction. The COO manages all operations including the agritech division. The Head of Agritech and the Agritech Ops Lead jointly own the production system; the Ops Lead reports operationally through the COO via the Head of Agritech. The CSO operates independently on capital and partnerships and has no operational authority over the agritech team. The Financial Director reports directly to the CEO and is independent of operations.

Meeting cadence. Weekly leadership sync (CEO/COO/CSO). Twice-monthly full team sync. Monthly stakeholder meeting (CEO/COO/CSO/Michel) for government, investor, and partner engagement. Monthly finance review (CEO/Linda). Weekly agritech standup (Michel/Olivier/Farmer) for field operations, system health, and data review.

Scaling path. At Stage A (2–3 sites, 30–50 towers) we add field technicians and a sales lead; the COO manages a growing operations team and Michel & Olivier manage agri staff. At Stage B (5–10 sites) we add regional managers and a marketing lead; department heads emerge and the CEO transitions toward strategy and fundraising. At Stage C (50+ sites, franchise model) full departments form, SOPs and training become productized, and the regional structure crystallizes.

Every role designed today is intended to scale into a department head or team lead. We do not hire for "today's gap." We hire for "the role this becomes in two years."

12. Risk register and mitigation

The principal risks the company faces, with explicit mitigation strategies:

Operational and biological. Pythium root rot is the most serious tropical-CEA pathogen and is exacerbated by warm reservoirs and aeroponic mist conditions. Mitigation: chill nutrient reservoirs below 22°C, deploy UV or slow-sand filtration on all reservoirs, enforce strict between-cycle sanitation, add nanobubble dissolved-O_2 dosing as Stage A matures. Algae control via opaque fittings and quarterly reservoir cleanouts. Strawberry pollination is constrained because *Bombus terrestris* is unavailable in East Africa; mitigation through native solitary-bee hives, electric vibration wands, and manual brush pollination, with a 0.80–0.90 yield haircut applied in the financial model.

Power and infrastructure. Pump downtime above two hours in tropical heat causes root desiccation. Mitigation: small UPS or solar-DC pump backup per dosing zone (USD 300–500/zone); 3–5 kWp PV plus 10 kWh battery sized to carry pumps and climate fans through 2-hour outages at the pilot scale; diesel genset only as deep-fallback.

Market and demand. Concentration risk if the first one or two anchor customers represent the majority of revenue. Mitigation: diversify across at least three customer types (hotel, supermarket, restaurant or institutional) before exiting Stage A. Multi-year contracts with price escalators tied to a transparent index protect against commodity volatility.

Currency. USD-denominated CAPEX (towers, climate equipment) versus RWF-denominated revenue creates an FX exposure that compounds as the network scales. Mitigation: maintain a USD-denominated reserve, model conservative RWF depreciation in long-term projections, and consider FX-hedging products through BRD as exposure grows.

Founder dependency. The single biggest threat to enterprise value at exit. Mitigation: documented SOPs from Day 1, deliberate delegation milestones at each stage gate, and a hiring plan that builds the bench before the founder becomes the bottleneck.

Regulatory. Permits (Seed Producer, Plant Importation, fertilizer registration) are tractable but slow. Mitigation: assign Olivier to own the RICA/RAB compliance calendar and submit early. RSB certification timeline managed by Michel.

Reputational and political. A failed pilot is a public failure, given the MINAGRI MoU and PSTA 5 alignment. Mitigation: under-promise externally; over-deliver on operational basics; maintain disciplined external communications via the CEO and CSO only.

13. Long-term vision (5–10 years)

By 2030, Upgrow Rwanda Ltd has completed Phase 1 — Upgrow-owned and operated production at scale. The company has approximately 500 towers operating across three Rwandan cities (Kigali, plus two of Musanze, Huye, Rubavu, or Bugesera), supplying organized retail and hospitality through multi-year contracts. A Kigali-based aggregation and cold-chain hub serves the multi-site harvest pool. The Phase-1 production playbook is documented end-to-end and ready for Phase-2 deployment.

By 2031–2033, Phase 2 — the farmer-and-people's-land partnership network — is live. The first 10–20 farmer partners are operating sites under Structure A and Structure B agreements. Upgrow's role is shifting from sole operator to operator + network orchestrator. Each new farmer onboarded is selected from a pre-qualified pipeline cultivated during Phase 1, and joins a system that has already been proven across 500 Upgrow-operated towers.

By 2035, the company is a regional CEA infrastructure operator. It runs distributed production hubs across Rwanda and at least one cross-border location (Bujumbura, Bukavu, Goma, or Kampala). It supplies organized retail and hospitality at scale through multi-year contracts. It exports greenhouse-grown strawberries and herbs through the NAEB packing house. The network includes hundreds of Phase-2 farmer partners alongside the original Upgrow-operated flagship sites. The cumulative dataset on yield, cost, demand, and farmer economics is a defensible secondary asset and a candidate for productization.

By that point, the company is positioned as a strategic acquisition target for a regional food conglomerate, a sovereign-backed agriculture fund, or a hospitality group integrating its supply chain. The vision is intentionally not "Upgrow IPOs at unicorn valuation." It is: Upgrow becomes the unsexy infrastructure layer that the next decade of East African food systems is built on top of, and the company captures durable economic value as a result.

14. Exit logic — realistic Rwanda-anchored

Valuation bands by stage, anchored to revenue and contract evidence rather than hype multiples:

Stage	Towers	Revenue/yr	Valuation range	Driver
Stage 0 — Pilot	10	<USD 10K	<USD 100K	Pre-revenue; valuation is concept + team +

Stage	Towers	Revenue/yr	Valuation range	Driver
				MoU + early infrastructure
Stage 1	10–100	USD 25K–110K	USD 200K–800K	Demonstrated replicability beyond a single site; first contracts
Stage 2	100–200	USD 70K–145K	USD 600K–2M	Operational maturity; founder delegation; diversified contract portfolio
Stage 3	200–500	USD 180K–600K	USD 1.2M–5M	Multi-city execution; aggregation hub; Phase-2 readiness
Stage 4 — Phase 2	500–1,500	USD 400K–1.1M	USD 3M–12M	Farmer-network economics validated; strategic partner conversations
Stage 5 — Regional	1,500+	USD 1.2M–3M+	USD 8M–20M+	Cross-border footprint; export lane; strategic acquisition optionality

These ranges assume operational maturity, founder delegation, and contract evidence in place at the relevant stage. Without those, the lower bound applies; without those for too long, no acquirer pays at all. Every number above assumes the realistic, defensible premium-pricing structure described in section 5.5 — not retail markups we cannot actually charge a B2B buyer. Every number through Stage 3 assumes Phase-1 economics (Upgrow-leased land, Upgrow-employed operators); Stage 4 onward blends Phase-1 and Phase-2 unit economics with the latter's revenue-share dynamics built in.

15. Open questions — what we still need to prove

This section is intentionally explicit about uncertainty. None of these questions block Stage 0 progress, but each one must close before later-stage capital can responsibly be raised. Items are tagged with the stage by which an answer is required.

6. **Measured per-tower yield in Kigali conditions, per archetype.** [Stage 0] The model assumes 0.20 kg/plant/cycle blended; an Archetype-1 yield haircut of 15–25% is assumed but unmeasured. The pilot must measure yield for each placeholder crop in each archetype it deploys. If lettuce in Archetype 1 comes in at 0.15 kg instead of 0.20, the entire revenue band shifts down 25% for the largest portion of the network.
7. **Real CIF Kigali tower cost at order quantity.** [Stage 0 → Stage 1] USD 830/tower is the working assumption; the pilot shipment cost more. The 100-tower order in Stage 1 calibrates the actual cost ladder.
8. **Real anchor-customer pricing.** [Stage 0] The defensible B2B premium-supply pricing — USD 0.40–0.55 per premium butterhead head, USD 8.50–11.00/kg basil, USD 6.50–8.50/kg mint, USD 4.00–5.50/kg strawberries — is the working model. The first signed weekly contract turns this into measured data. We will not assume retail-tier markups we cannot defend at the procurement table.
9. **CFGET landed-and-installed cost in Kigali.** [Stage 1 if greenhouse selected] The CFGET EXW quote is USD 7,519. Real CIF Kigali + install + foundations is modeled at USD 19,000–22,000. This will be measured the first time the company places the order.
10. **Open-air pest and theft loss rates.** [Stage 0] Archetype 1 (open-air with fence and shade cloth) is the default for local crops. The pilot must measure actual loss rates from pests, birds, and theft — and validate that the assumed yield haircut vs Archetype 2/3 is correct.
11. **Disease and equipment failure rate.** [Stage 0] Pythium, algae, pump failure — what is the real downtime rate and yield haircut in Kigali in each archetype? Open-air sites may have *lower* Pythium rates due to better aeration but higher pest exposure.
12. **Land lease pricing under counsel review.** [Stage 1] USD 0.10/m²/month is a placeholder; counsel review and actual lease negotiation may move it materially. Phase-1 leases are direct to Upgrow; Phase-2 sub-lease structures are a separate question for Stage 4.
13. **Phase-2 farmer adoption pipeline.** [Stage 3] By the end of Stage 3, the company needs 5–10 pre-qualified farmer partners ready to sign Phase-2 agreements. The Phase-1 ambassador / training program (see Section 17) is the engine for this. How quickly will this pipeline form, and at what acquisition cost per partner?
14. **Phase-2 farmer economics.** [Stage 4] The 50/50 revenue-share-until-2×-CAPEX-recovered structure is modeled but never tested with a real farmer in Rwanda. The first three Phase-2 sites in Stage 4 will define the contract template for the rest of the network. Are the modeled farmer

take-home numbers actually motivating? Does the 24–36 month buyback period match real revenue trajectories?

15. **Cooperative vs. direct-farmer engagement.** [Stage 4] Some Phase-2 sites will work better with a registered cooperative as the counterparty; others with an individual farmer. The first cohort of Phase-2 sites will surface which mode fits which kind of partner.
16. **Aggregation hub economics.** [Stage 3] A Kigali cold-chain micro-hub serving multi-site harvest pooling is modeled but unbuilt. CAPEX, throughput break-even, and the on-time-in-full uplift it generates need to be measured before Phase-2 sites add complexity.
17. **Currency exposure scaling.** [Stage 2 → Stage 3] At what tower count does USD-denominated CAPEX exposure become material enough to warrant a formal hedging policy? Likely Stage 2/3 transition.

Each of these is a tractable empirical question. Each will be answered by data. The discipline is not pretending we have answers we don't.

---

16. Strategic enhancements — recommendations to strengthen the blueprint

The recommendations below are not yet decisions. They are concrete, leveraged moves the leadership team should evaluate during Stage 0 and Stage 1 because they materially improve the blueprint's defensibility, operational economics, or long-term value at relatively low incremental cost. Each is owned by a named member of the team; each has a stage at which it should be live.

16.1 Contract-anchored production, not speculative production

Default behaviour in agriculture is to plant first, then sell what grew. We invert this. Before any new tower block is deployed beyond the pilot, the CSO must secure a named buyer commitment — a signed Letter of Intent or contract — for the majority of that block's projected output. Towers are allocated to contracts, not to hope. This single discipline removes the most common agritech failure mode (overbuilding capacity ahead of demand) and turns each customer relationship into a CAPEX-justifying anchor.

Owner: Bailey (CSO). *Live by:* Stage 1.

16.2 Harvest synchronization across sites

By Stage 2, the network has 6–8 Upgrow-operated sites. A single hotel customer wanting three deliveries per week should not require Upgrow to grow at three times the cycle frequency at one site; it should require staggered seedling cohorts across three sites such that one harvests Mon/Wed/Fri and another Tue/Thu/Sat. This converts the network's *multi-site* nature into a customer-facing supply

rhythm advantage that no single farm can match. Olivier and Michel jointly own the master cycle calendar.

Owner: Michel + Olivier. *Live by:* Stage 2.

16.3 In-house seedling nursery

A small dedicated seedling nursery — 30–50 m² of net-house at the Kigali flagship site — solves three problems at once: it eliminates dependency on third-party seedling suppliers (a known constraint in Kigali), it turns RICA seed import permits from a recurring bottleneck into a one-time annual exercise, and it creates a small but real secondary revenue line (selling seedlings to other farmers and to the Phase-2 partner pipeline). Upgrow becomes the Phase-2 farmers' propagation source, deepening the partnership.

Owner: Olivier (under Michel). *Live by:* end of Stage 1 / start of Stage 2.

16.4 Kigali cold-chain aggregation hub

Already referenced in Stage 3, but worth elevating here: a single Kigali-based packing and cold-chain micro-hub serves all multi-site harvest. Each site harvests, packs to spec, and trucks to the hub by mid-morning; the hub's afternoon delivery run hits all customers in one optimized route. Per-site cold-chain cost drops by an estimated 40–60% versus distributed cold rooms, and on-time-in-full delivery improves materially. The hub is also where Upgrow-branded packing happens (next item).

Owner: COO (Terry). *Live by:* Stage 3.

16.5 Upgrow-branded retail packaging

By Stage 2, every kilo leaving Upgrow's hub should be packaged in branded, recyclable, traceable packaging — even if it goes to a bulk hotel customer who repackages it. The cost is small; the downstream value is large. By Stage 3, when Upgrow approaches Simba or Sawa Citi for shelf placement, the brand is already familiar to their procurement team. Branded packaging is the cheapest moat the company can build during early years.

Owner: CEO + CSO. *Live by:* Stage 2.

16.6 Subscription supply program for restaurants

The pilot business plan referenced this; making it concrete: design a tiered weekly subscription product for restaurants — small (10–20 kg/week leafy greens + herbs), medium (30–50 kg/week), large (60+ kg/week) — at flat monthly pricing with locked-in volume guarantees and a one-month opt-out. Restaurants love predictable line-item costs; this turns spot relationships into recurring revenue and improves cashflow forecasting. Pilot the program with one anchor restaurant in Stage 1, formalize and scale in Stage 2.

Owner: Bailey (CSO) + COO (Terry). *Live by:* Stage 2.

16.7 Phase-2 farmer ambassador pipeline (cultivated during Phase 1)

The Phase-2 farmer-network model launches in Stage 4 (2031). The pipeline of qualified farmer partners that makes Stage 4 succeed must be cultivated *now*, during Phase 1. Recommended program: monthly farm visits at the pilot/Kigali sites, hosted by Olivier and Michel, attended by 5–10 pre-screened farmers; an informal Upgrow Farmer Network newsletter (Kinyarwanda + English); and a quiet pre-qualification list maintained by Olivier. By the end of Stage 3, the company should have 30–50 farmers who already understand the model and are eager to join.

Owner: Olivier (under Michel and CEO). *Live by:* Stage 1 informally, Stage 2 formally.

16.8 Energy resilience: solar PV from Stage 1, not deferred

Ireme Invest is a green-finance facility. Diesel back-up is the default; solar back-up is the strategic story. A 5–8 kWp PV + 15–20 kWh battery at the Kigali flagship site costs USD 8,000–12,000 installed and aligns Upgrow's narrative with the funding source it depends on. Diesel genset remains as deep-fallback only. This is also a measurable carbon-impact data point useful in MINAGRI reporting under PSTA 5 Pillar 3 (climate-resilient agriculture).

Owner: CEO + Linda (financing). *Live by:* Stage 1.

16.9 Pre-contract crop validation with the actual buyer

Before committing 20+ towers to any new crop or new variety, send a sample box to the target chef or buyer and capture explicit feedback: appearance, taste, shelf life, acceptable size band, packaging preference. A two-week sample cycle removes 80% of post-deployment surprises and locks the buyer's psychological commitment to the eventual contract. The Head of Agritech runs the sample protocol; the CSO closes the resulting contract.

Owner: Michel + Bailey. *Live by:* Stage 0 informal, Stage 1 standard practice.

16.10 Data as a secondary asset, productized in Stage 4

Every harvest cycle, in every archetype, on every crop, generates structured data: yields, growing-cycle duration, water/nutrient/electricity usage per kg, customer accept/reject rates, weather correlation. By Stage 4 this is a multi-year multi-site dataset of measurable East African CEA economics. It can be productized in three ways: (a) a benchmarking/SaaS tool for other CEA operators in East Africa; (b) an input to MINAGRI / PSTA-5 monitoring at a paid contract value; (c) a pricing / yield-prediction service for downstream buyers. The data is collected from Day 1, structured for productization from Stage 1, and monetized from Stage 4.

Owner: CEO + COO; data structuring under Olivier. *Live by:* Stage 1 (collection), Stage 4 (monetization).

16.11 Crop insurance from Stage 0

UAP and SONARWA offer East Africa crop insurance products at roughly 4% of insurable revenue. For a pilot site this is USD ~300–500/year — cheap relative to a single major event (hailstorm, pump failure, theft incident). Linda Uwase establishes the policy from Stage 0 and the policy carries forward unchanged to all Stage-1 sites.

Owner: Linda. *Live by:* Stage 0.

16.12 Modular site standardization — the deployable 30-tower block

By the end of Stage 1, every Upgrow site should be built from the same components: same tower mounting spec, same dosing cabinet, same water tank position, same electrical layout, same packing-area design, same pest-monitoring protocol. The "30-tower block" becomes the unit of deployment, not the unit of design. This compresses Stage-2 site build-out from a 6–8 week custom job to a 2–3 week assembly job, and it dramatically reduces training overhead for new operators. Documented as a "Site Build Playbook" by Olivier and Michel.

Owner: Michel + Olivier. *Live by:* end of Stage 1.

16.13 Currency reserve and hedging policy

USD-denominated CAPEX (towers, greenhouse imports) versus RWF-denominated revenue is a structural exposure. By Stage 2, with cumulative CAPEX commitments in the USD 100,000+ range, formalize a treasury policy: maintain a USD reserve equivalent to 6 months of forward CAPEX, monitor RWF/USD weekly, consider BRD-offered FX-forward instruments for large planned imports. Linda Uwase owns the policy.

Owner: Linda. *Live by:* Stage 2.

16.14 Demonstration and training presence at the pilot site

The pilot site is also Upgrow's most visible asset to MINAGRI, RAB, journalists, students, donors, and prospective Phase-2 farmers. Investing modestly in tour-readiness — clean signage, a one-page take-away handout in Kinyarwanda + English, a 30-minute walking tour script, monthly "open day" — converts the pilot into an asset for stakeholder management, government goodwill, and farmer-pipeline cultivation. Cost: minimal. Strategic value: significant.

Owner: Bailey + CEO. *Live by:* Stage 0.

16.15 VAT registration timing

VAT registration triggers compliance obligations but enables input VAT recovery on non-exempt imports (e.g. some control-system components). Most Upgrow inputs and outputs are VAT-exempt under Rwandan tax law, so input VAT recovery is limited. The recommendation is to *defer* VAT registration

until the Stage 1/2 transition when annual revenue approaches the VAT-registration threshold (currently RWF 20M / ~USD 14K), at which point the cost-benefit flips. Linda runs the analysis quarterly.

Owner: Linda. *Live by:* Stage 1 review, Stage 2 decision.

These fifteen enhancements should be treated as a working backlog. The CEO and leadership team review them quarterly; each one moves to "live" only with a documented owner, a measurable success criterion, and capacity in the team's monthly schedule. None of them require fundraising; most can be executed within the existing team's bandwidth. Together they meaningfully improve the blueprint's defensibility and durability.

---

17. Document control

Version history.

- v1.0 — May 2026 — Initial canonical strategy document. Replaces all prior pilot business plans, scaling blueprints, and strategy memos. Approved by leadership team.

Successor documents that derive from this one.

- Upgrow Financial Model v2.0 (rebuild of Unit Economics workbook against revised per-tower band and 4-crop placeholder portfolio).
- Upgrow Pilot Operations Manual & SOPs (Olivier + Michel).
- Upgrow Investor Briefing Pack v2.0 (Bailey Flint + CEO).
- Upgrow Tier-1 Farmer Partnership Template (legal review, Linda + counsel).
- Upgrow Tier-2 CEA Site Build Playbook (Michel + Olivier).

Confidentiality. This document is confidential to the Upgrow Rwanda Ltd leadership team, the company's named advisors and counsel, and parties under signed NDA. It is not for external distribution without CEO approval.

Reference data sources used in this document.

- Internal: Upgrow Unit Economics workbook v1.0; pilot business plan; MINAGRI MoU and Annexes; company structure document; Olivier and Michel engagement agreements; CSO contract; team briefing materials.
- Regulatory: MINAGRI PSTA 5; Law N° 006/2021 (Investment); Law N° 27/2021 (Land); Law N° 024/2021 (Cooperatives); RDB; RICA; RAB; RSB; NAEB; RRA; BRD/Ireme Invest; FONERWA.

- Pricing: Selina Wamucii Rwanda 2026; Tridge Rwanda; Numbeo Kigali; Garden of Eden Rwanda; The East African (Radisson Blu disclosure); CBI Europe; Greenspoon Kenya; Eza Neza Rwanda.
- Yield & operations: Agrotonomy published rates and yield data; ZipGrow benchmarks; MDPI agricultural studies; CropKing; WASAC; REG (Rwanda Energy Group).
- Living wage: Anker Research Institute Rural Rwanda 2025.
- FX: USD:RWF 1,400 (April 2026 reference rate).

End of document. This is version 1.0. The next version will be re-anchored to measured pilot data.