

CONFIDENTIAL | WORKING DRAFT

# ROOTS2BEANS

## Marketing Research Project

### *Comprehensive Working Paper*

Research blueprint for a two-sided farmer-to-institutional-buyer integration model

**PURPOSE** This is the full substance reservoir for the final GMKTG261 presentation and an implementation guide for a future SMI-commissioned study. It is intentionally not organized slide by slide. LT4A is designing the research; it is not conducting fieldwork or presenting research findings in this course output.

Prepared for GMKTG261 - Developing Marketing Strategy Through Research

LT4A Marketing Research Team

Jennifer Joy C. Subang | Joshua Arnel T. Sususco | Joseph Raymond V. Marquez | Ma Jennifer C. Driz

Version 4.0 | 25 August 2026

Source base: approved Concept Statement, Market Research Brief v5.2, GMKTG261 course materials, project rubric, authorized SMI records, and independently traceable industry and methodological sources

## Working document status and use

**WORKING STATUS** This document is a prospective market-research protocol. It distinguishes source-established context, inherited estimates requiring verification, research hypotheses, management standards, and future outputs. It contains no fieldwork findings and makes no claim that farmer adoption, GAMMOT performance, income stability, operating feasibility, or buyer purchase behavior has already been demonstrated.

| Label used in this paper   | Meaning                                                                                                                         | How it may be used                                                                                 |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Source-established         | Directly stated in an allowed project source, an authorized SMI record, or a traceable primary/academic source.                 | May be used as project context, subject to the limitations of its source.                          |
| Verify before presentation | A dated market figure, buyer assertion, management declaration, or inherited deck claim not yet tied to an allowed source.      | May appear only after direct verification with a current, traceable citation or authorized record. |
| Research hypothesis        | A proposed relationship or expected result that has not yet been observed.                                                      | May be stated as a hypothesis, never as a finding.                                                 |
| Management standard        | A threshold chosen to govern a proceed/revise/narrow/pause decision in the future commissioned study.                           | Must be approved before data collection; it is not a population fact.                              |
| Future study output        | A finding, dataset, recommendation, or decision that can exist only after SMI or its research partner implements this protocol. | Describe as an expected deliverable, never as a result of the current course project.              |

## Document map

1. Executive synthesis and rubric implications
2. Triangulated source foundation and reconciliation decisions
3. Industry opportunity, target market, and coordination failure
4. Roots2Beans concept, two-sided value proposition, GAMMOT, and theory of change
5. Management decision, research issue, research questions, and hypotheses
6. Methodological framework, research precedent, and rejected alternatives
7. Target population, sampling frame, sample-size defense, and quotas
8. Stimuli, instruments, fieldwork procedures, and analysis plan
9. Rigor, validity, reliability, ethics, governance, and bias control
10. Action standards, decision matrix, timeline, deliverables, and limitations
11. Panel-defense issues and remaining information required from SMI/LT4A
12. Appendices: exact neutral concept, calculations, definitions, and references

## Executive synthesis

Roots2Beans should be researched as an integrated upstream-to-midstream operating model, not as a finished coffee product, cafe concept, specialty-coffee intervention, or stand-alone software application. Its service architecture links farmer support, evidence-based work verification, primary post-harvest activities, aggregation, buyer-specification alignment, traceability, and institutional market access. Green coffee bean (GCB) is the physical output. Commercial Robusta is the initial anchor specification to test, not the final definition of the entire product-market opportunity. Roasting, grinding, consumer packaging, brewing, cafes, retail, and consumer-brand marketing remain outside scope.

The proposed exchange has two farmer income components. During the production cycle, eligible and successfully onboarded farmers may receive milestone-based work compensation when prescribed farm activities are evidenced through GAMMOT and approved under transparent rules. At harvest, SMI purchases buyer-acceptable GCB from the farmer under a separate, clearly disclosed sale. On the buyer side, Roots2Beans must test whether qualified institutional buyers value specification alignment, quality assurance, traceability, reliable volume, predictable delivery, and lower coordination burden enough to pay a premium or provide an equivalent commercial commitment. Nestle Philippines is an anchor reference pathway, not automatically the sole target buyer; any asserted offtake is treated as a management declaration until an authorized document confirms its operative terms.

The GMKTG261 deliverable is the guide for how SMI should test this model. It does not generate participant data, findings, or a proceed/revise/narrow/pause recommendation. Those outputs belong to a later SMI-commissioned study. Actual enrollment, milestone compliance, payment timeliness, yield, income stability, GCB purchase and delivery, and season-long GAMMOT performance belong to a still-later operational pilot.

**RECOMMENDED CORE DESIGN** For future commissioning: a pragmatic exploratory sequential multiphase mixed-methods study consisting of buyer-landscape and documentary review; approximately 12-18 buyer/ecosystem KIs across 8-12 qualified organizations; separate buyer concept, requirement, and commercial-value testing; farmer FGDs and private IDIs; a bounded n=240 farmer survey with realistic competing-offer scenarios; two-round role-based GAMMOT testing; and an integrated buyer-farmer fit, legal, operating, cash-flow, and decision review.

## Rubric implications

The course gives only 20 minutes for the presentation and allocates 60% of proposed presentation time to research design and action standards, compared with 10% for the industry/market, 10% for the concept, and 20% for the brief and hypotheses. The scoring rubric separately assigns 15 points to the

research question, 25 to methodological fit, 25 to rigor, 25 to data collection and analysis, and 10 to presentation quality and panel engagement. The working paper therefore gives more depth to sampling, method choice, instruments, analysis, rigor, ethics, and action standards than to market storytelling.

- The research question must be specific, answerable, bounded, and tied to a genuine innovation challenge.
- The chosen qualitative and quantitative approaches must be named, supported by analogous research, and preferred over realistic alternatives for explicit reasons.
- Rigor must be procedural: credibility, transferability, dependability, confirmability, internal validity, external validity, construct validity, and reliability need concrete safeguards.
- Sampling, sample size, instruments, analysis, and ethics must be sufficiently detailed for implementation and panel defense.
- The deck ultimately built from this paper should preserve the flow from problem to method to decision implications while staying within time.

## 1. Triangulated foundation

### 1.1 What each source contributes

| Source                                  | Primary contribution                                                                                                                                                                                                     | What it does not establish                                                                                                                       |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| LT4A Concept Statement                  | The approved unbranded, farmer-facing promise: Company X begins with the first seedling and supports farmers from farm planning through post-harvest preparation.                                                        | It intentionally omits brand cues, buyer commitments, financing mechanics, monitoring, data rights, repayment, delivery obligations, and GAMMOT. |
| Market Research Brief v5.2, 06 Aug 2026 | The most current formal decision scope, research audiences, sequential mixed-methods design, approved geographic coverage, initial samples, six-week timing, deliverables, governance, and preliminary action standards. | It leaves the farmer-adoption threshold and operational/economic ceilings undefined; its farmer survey remains directional at n=100-120.         |
| Current Roots2Beans working materials   | Management declarations and the evolving articulation of the two-sided model, GAMMOT workflow, farmer payment architecture, Nestle anchor pathway, and proposed operating boundary.                                      | They are design inputs, not independent evidence of market size, buyer demand, farmer adoption, offtake, price premium, or operating viability.  |
| Authorized SMI and buyer records        | Executed agreements, approved specifications, historical transactions, cost and cash-flow records, role maps, operating capacity, and GAMMOT process documentation when supplied.                                        | Verbal statements, draft terms, and unauthorised summaries do not establish binding commitment or complete economics.                            |
| Primary industry and academic sources   | Dated market context, buyer/farmer research precedent, measurement constructs, and methodological justification that can be traced independently.                                                                        | External sources cannot establish the specific Roots2Beans offer, SMI capacity, or buyer commitment without project-specific evidence.           |
| Market Research Project Rubric          | Evaluation baseline and presentation weighting, with explicit emphasis on research question, method fit, rigor, sampling, analysis, ethics, and panel defense.                                                           | It does not determine business thresholds; those must come from SMI risk tolerance and operating economics.                                      |

## 1.2 Triangulation conclusion

The approved concept and Brief v5.2 are complementary but not interchangeable. The neutral concept provides the controlled initial farmer stimulus; the brief provides the formal research decision and proposed fieldwork architecture; authorized SMI records supply project-specific operating inputs; and independent primary or academic sources support industry and method claims. The current Marketing Research Project converts these allowed inputs into a protocol. Only approved project materials, authorized SMI records, course sources, independently traceable primary or academic sources, and evidence generated by the commissioned study may support claims. Any unsupported market fact, segment description, observation, commercial assumption, or proposed threshold must remain an assumption to test or be removed.

The neutral concept should remain neutral during the first exposure. Full commercial terms should be disclosed only after initial comprehension and appeal are measured. GAMMOT should then be evaluated as a task-based workflow, not merely described. This sequence permits the team to observe whether apparent interest survives the disclosure of obligations and whether stated confidence is consistent with actual task performance.

## 1.3 Reconciliation decisions required

| Issue                  | Current sources                                                                              | Working-paper recommendation                                                                                                                                                                                                   |
|------------------------|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Geography              | Brief v5.2 identifies Agusan del Norte and Davao Region.                                     | Use these areas as the initial farmer-research boundary unless SMI formally changes the brief. Buyer organizations may sit elsewhere if they procure Philippine GCB relevant to the pilot corridor.                            |
| Farmer survey          | Brief v5.2: n=100-120, directional.                                                          | Recommend n=240 for eight planned quota cells and defensible subgroup comparisons. Record this as a formal change requiring approval; do not imply national representation.                                                    |
| Buyer/stakeholder KIIs | Brief: approximately 6-8 buyer KIIs; team review requires two-sided value and STP discovery. | Expand to approximately 12-18 buyer/ecosystem KIIs across about 8-12 qualified buyer organizations and three to four buyer archetypes. Nestle remains an anchor reference case, not the entire demand sample.                  |
| Farmer qualitative     | Brief: four FGDs of 6-8.                                                                     | Retain four FGDs and add approximately eight IDIs for seasonal cash gaps, intercropping/labor conflict, payment disputes, privacy, side-selling, trust, and other topics that participants may not discuss candidly in groups. |
| GAMMOT sample          | Brief: 20-30 farmers; the system also affects validator, procurement, and payment roles.     | Use 24 farmer participants in two rounds of 12 and include the minimum fresh role-holders needed to test validation, procurement, payment, correction, and audit handoffs. Keep season-long operating use for the later pilot. |
| Farmer threshold       | Brief: SMI-approved minimum, not specified.                                                  | Use provisional numerical standards in this paper for discussion; SMI must approve the final threshold before fieldwork.                                                                                                       |

| Issue                       | Current sources                                                                                                                                        | Working-paper recommendation                                                                                                                                                                                                                                      |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Buyer value and economics   | Buyer premium, offtake, and willingness to change suppliers remain unverified.                                                                         | Test price premium and equivalent commitments such as minimum volume, longer term, faster payment, advance financing, shared traceability cost, or reduced rejection exposure. Fully loaded buyer-derived value must cover the farmer offer and operating system. |
| Legal status and operations | Brief requires viability but gives no floors or capacity ceilings; management declarations add milestone compensation and separate SMI GCB purchasing. | SMI must supply counsel-cleared terms, working-capital timing, costs, margin, staffing, and downside limits before full-term stimuli and pilot approval.                                                                                                          |

## 1.4 Source-governance rules for v4.0

| Potential input                    | Permitted treatment                                                                                                                                                | Prohibited treatment                                                                                                    |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Concept Statement and Brief v5.2   | Use as the approved project definition, neutral concept, formal research scope, and initial method baseline.                                                       | Do not treat proposed benefits, samples, or thresholds as completed findings.                                           |
| Management and LTmate declarations | Use to identify assumptions and design requirements, including two payment streams, the anchor-plus-market buyer logic, and GAMMOT's intended role.                | Do not cite declarations as proof of buyer demand, farmer preference, offtake, premium, or economic viability.          |
| SMI internal records               | Use only when authorized, current, attributable, and sufficiently complete; classify contract, specification, cost, capacity, or transaction evidence by strength. | Do not equate a verbal assurance, draft document, or relationship history with an executed commitment.                  |
| Industry and market claims         | Source directly to PSA, DA/PCAF, BAFS, authorized buyer publications, or another traceable primary source with date, geography, definition, and unit.              | Do not use superseded internal material as an intermediate citation or origin of fact.                                  |
| Farmer and buyer insights          | Generate through the future KIIs, FGDs, IDIs, survey, observed tasks, authorized records, and explicit competing-evidence review.                                  | Do not reuse earlier exploratory observations or interview conclusions as findings of this study.                       |
| Commercial scenarios               | Build from SMI-approved inputs and show the formula, timing, sensitivity, and downside assumptions.                                                                | Do not inherit unverified premium, yield, volume, default, revenue, or scale figures from superseded internal material. |
| Superseded internal material       | Use only the approved concept, Brief v5.2, authorized SMI records, course sources, and independently traceable evidence identified in this paper.                  | Do not list, cite, quote, paraphrase, footnote, or use excluded material as evidence in v4.0 or the final deck.         |

## 2. Industry opportunity and evidence boundaries

### 2.1 Market-system opportunity

The project starts from a market-system hypothesis: qualified institutional buyers may face supply reliability, specification, traceability, aggregation, timing, and coordination problems, while farmers may face seasonal liquidity, production-support, market-access, payment, and bargaining constraints. Roots2Beans proposes to coordinate these functions. The future research must determine whether

these problems are material for each side, whether the proposed service bundle is preferable to current alternatives, and whether buyer-derived value can support the farmer offer and SMI's operating costs.

The market opportunity should therefore be expressed as an evidence-backed supply-conversion problem rather than as an oversized national revenue claim. National figures can establish context, while the research decision remains bounded to a serviceable pilot catchment in Agusan del Norte and the Davao Region.

## 2.2 Evidence ledger for market claims

| Claim category                                                    | Required source or evidence                                                                                                                                           | Presentation rule                                                                                                                            |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| National or regional GCB production, area, price, and variety mix | Current PSA releases or tables; DA/PCAF roadmap for strategic targets with the roadmap period shown.                                                                  | State the reference period, geography, unit, and whether the number is actual, preliminary, target, or scenario.                             |
| Institutional demand or local-sourcing interest                   | Authorized buyer publication, procurement record, executed agreement, or independently documented market source.                                                      | Do not infer Roots2Beans demand from general coffee consumption or a buyer's broad sustainability statement.                                 |
| Nestle anchor pathway                                             | Authorized SMI/buyer document plus knowledgeable role-holder verification of product, volume, term, acceptance, delivery, price, payment, rejection, and termination. | Describe as an anchor reference or management-declared pathway until the evidence supports stronger wording.                                 |
| Buyer premium or equivalent commitment                            | Buyer concept/requirements interviews, structured commercial-value testing, and an authorized next-step or term sheet.                                                | Treat willingness to pay as a hypothesis; report both price and non-price value such as volume, contract term, financing, and payment speed. |
| Farmer value, acceptance, and retention                           | Future farmer qualitative work, n=240 survey, teach-back, EOI, and realistic competing-offer scenarios.                                                               | Do not equate concept liking with informed onboarding, delivery, or loyalty.                                                                 |
| Yield, default, margin, scale, or revenue scenario                | SMI-approved model with traceable inputs, formula, timing, sensitivity, capacity ceiling, and downside cases.                                                         | Label as a management scenario until observed pilot behavior and transactions exist.                                                         |

## 2.3 Priority research market

The priority research market is not a predetermined farmer label or a Nestle-only supply route. It is the set of feasible buyer-specification-farmer corridors within which Roots2Beans could coordinate a commercially meaningful transaction. The initial farmer catchment remains Agusan del Norte and the Davao Region, while the buyer universe includes qualified institutional organizations that directly procure or specify Philippine GCB at a scale relevant to a controlled pilot.

Commercial Robusta and farmers with approximately 1-3 hectares may be used as initial screening or quota hypotheses only when supported by the brief and SMI operating intent. The research should measure actual buyer requirements, farmer capability and burden, selling behavior, seasonal liquidity, support needs, trust, digital readiness, and response to competing offers. Segments and the recommended corridor must emerge from observed variables and feasible value matching rather than from labels assigned before fieldwork.

## 2.4 Two-sided research audience

- Farmer-side adopters: active smallholders, agrarian reform beneficiaries, farmer groups, cooperatives, and landowners who could accept production, milestone-verification, data, GCB sale, and delivery obligations.
- Qualified institutional GCB buyers: processors, manufacturers, exporters, aggregators, roasters, or other organizations that directly procure or specify GCB at a pilot-relevant scale. Nestle is one anchor reference case within this population.
- Buyer decision makers and specifiers: procurement, technical acceptance/quality, supply planning, logistics, finance, contracting, sustainability, and traceability roles with knowledge of requirements and authority to evaluate a next step.
- Operational enablers: SMI field staff, agronomists, community-processing actors, financiers, technology owners, and partner cooperatives. They are not the primary demand sample but are essential for feasibility and economics inputs.

## 2.5 Alternatives and competitive frame

Roots2Beans must be compared with realistic channels and integrators, not an empty market. Trader-led channels may offer speed, immediate cash, and opportunistic price advantages. Cooperatives and direct-buyer arrangements may offer aggregation and market access but vary in governance and execution. Contract growership can bundle support and assured purchase but may create dependency or unfair terms. Stand-alone traceability tools do not by themselves solve seasonal liquidity, agronomy, aggregation, working capital, or buyer commitment. The differentiation to test is the coordinated architecture and whether its total value remains attractive when another buyer offers a higher spot price or faster cash.

| Comparable entity                                   | Visible market role                                                                                                     | Defensible Roots2Beans distinction                                                                                                                                                         |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Equilibrium Intertrade / Curve Coffee Collaborators | Related enterprise/brand with grower, roasting, selling, cafe, traceability, and specialty-coffee ecosystem activities. | Closest broad commercial benchmark, but Roots2Beans is testing an institutional GCB integration and evidence-to-payment architecture rather than a consumer/specialty monetization center. |
| Luzon Coffee                                        | Agroforestry coffee producer with farming, drying, provenance, and specialty-market emphasis.                           | Roots2Beans is designed as a scalable farmer-network integrator and GCB procurement system, not mainly a single-origin or specialty producer/brand.                                        |

| Comparable entity       | Visible market role                                                                                                                        | Defensible Roots2Beans distinction                                                                                                                                                       |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Coffee Heritage Project | Farmer-development and Philippine coffee heritage initiative with on-farm investment, technical support, and market-building partnerships. | A useful farmer-development benchmark; Roots2Beans adds a commercial operating model in which GAMMOT verifies payable milestones and SMI separately buys GCB against documented offtake. |

These distinctions concern each entity's visible market-facing emphasis, not a claim that the comparators operate only downstream. Equilibrium/Curve, Luzon Coffee, and Coffee Heritage Project all show upstream or farmer-support elements. The future study should test whether Roots2Beans' specific compensation, data, procurement, and offtake bundle creates incremental value and acceptable obligations.

### 3. Business problem, research issue, and value added

#### 3.1 Business problem to carry into solution validation

**PROBLEM CARRIED FORWARD** Roots2Beans responds to a proposed coordination gap between farmers who need workable production-cycle support and market terms, and institutional buyers who may need reliable, specification-aligned, traceable, and efficiently coordinated GCB. The coordination gap is treated as a management hypothesis to validate—not as a proven finding—and the research is designed to determine whether a specific two-sided solution creates and captures enough value to justify a controlled pilot.

#### 3.2 Research issue

The future study must determine whether farmers regard milestone-based work compensation and the separate GCB purchase as useful, fair, understandable, and competitive with current channels; which buyers value the proposed supply, assurance, traceability, and coordination services; what premium or equivalent commitment they will provide; whether GAMMOT can support payable evidence and traceability without unacceptable error or surveillance risk; and whether SMI can fund and execute the matched buyer-specification-farmer corridor under downside conditions.

#### 3.3 Value added of this research

- Converts a broad industry diagnosis into an implementation-ready research blueprint and predetermined investment gates for a bounded regional pilot.
- Identifies the most viable buyer-specification-farmer corridor instead of prespecifying Nestle, commercial Robusta, or one farmer label as the final target market.

- Tests buyer willingness to pay a premium or provide an equivalent commercial commitment and connects that captured value to the fully loaded farmer and operating proposition.
- Separates the current protocol, the future commissioned study, and the later operational pilot so no anticipated output is misrepresented as a finding.
- Separates initial concept appeal from informed willingness after full milestone-payment, verification, GCB sale, data, rejection, correction, appeal, and exit terms.
- Adds observed GAMMOT payment-verification tasks to stated technology intention, reducing the risk of recommending the workflow from self-report alone.
- Requires documentary offtake evidence, legal review, and downside working-capital capacity; farmer enthusiasm cannot compensate for failure of those gates.

### 3.4 Innovation challenge

| Dimension    | Question the research must answer                                                                                                                                        |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Desirability | Which farmer and buyer segments perceive meaningful incremental value relative to current arrangements and competing offers?                                             |
| Usability    | Can intended users complete the minimum GAMMOT workflow accurately, independently, and with acceptable effort?                                                           |
| Viability    | Can buyer premium or equivalent commercial value cover the two farmer payment streams and fully loaded technology, quality, aggregation, financing, and operating costs? |
| Feasibility  | Can SMI recruit, onboard, verify, pay, support, convert cherries to buyer-acceptable GCB, aggregate, store, trace, and deliver at the proposed pilot scale?              |

## 4. The Roots2Beans innovation under test

### 4.1 The neutral concept

The approved unbranded concept presents Company X as a long-term partner that begins before harvest: supplying quality planting materials, farm planning, estate-development support, growership partnerships, technical guidance, modern agricultural technology, market access, and post-harvest preparation. It is emotionally framed around hope, family investment, and building stronger Filipino coffee farms from the first seedling. The exact text is reproduced in Appendix A.

**STIMULUS DISCIPLINE** This concept is appropriate for the first exposure because it explains the promise without naming Roots2Beans or overloading respondents with commercial details. It is not sufficient for measuring enrollment or transaction readiness. Those measures must follow a standardized full-terms disclosure.

4.2 Full operating model

The complete working model contains the following interdependent components, all subject to validation and final SMI approval:

- Farmer and farm registration, eligibility verification, mapping, and baseline profiling.
- Quality planting materials, rehabilitation or estate-development planning, and GAP-aligned production protocols.
- Technical guidance, field monitoring, farmer training, corrective support, and milestone definitions compatible with household labor and legitimate intercropping.
- Milestone-based work compensation for approved prescribed activities, with transparent value, timing, required evidence, validation, rejection, correction, appeal, deduction, suspension, and exit rules.
- GAMMOT/NFC activity records linking authorized users, farms, trees or lots, tasks, time, evidence status, approval, and payment status.
- Cherry harvesting under the applicable buyer pathway; the declared Nestle anchor route uses 'pick all,' while another buyer may require a different commercially justified practice.
- Primary post-harvest processing or conditioning that converts cherries to buyer-acceptable GCB, followed by buyer-required acceptance checks, storage, aggregation, and lot formation.
- A separate SMI purchase of buyer-acceptable GCB from farmers, with explicit volume, acceptance, delivery, rejection, price formula, deductions, and payment conditions.
- An anchor-plus-contingency buyer architecture specifying covered volume, duration, specification, acceptance, delivery, price or equivalent value, rejection, payment, termination, and force-majeure terms; Nestle is the anchor reference pathway, not the entire market.
- Authorized traceability and performance information for farmers, SMI, partners, financiers, and buyers under defined data-governance rules.

**OPERATING BOUNDARY** Roots2Beans stops at delivery of buyer-acceptable GCB to a qualified institutional buyer. Roasting, grinding, consumer packaging, finished-coffee branding, cafes, brewing, and retail are excluded. Commercial Robusta is the initial anchor specification, while the research tests whether another feasible GCB specification creates a stronger corridor. The anchor route does not presume specialty grading or premium quality.

4.3 Two-sided value proposition

| Farmer value to validate                                                             | Buyer value to validate                                           |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Production-cycle income from approved milestone work, separate from harvest proceeds | GCB aligned with an approved specification and acceptance process |

| Farmer value to validate                                                                  | Buyer value to validate                                                                                                      |
|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Farm planning, GAP support, and sustained technical guidance                              | Earlier visibility of production, volume, and delivery risks                                                                 |
| Potential access to planting materials, inputs, services, or credit under disclosed terms | Farm/lot origin and buyer-relevant protocol documentation                                                                    |
| Transparent evidence, validation, correction, appeal, and payment status                  | More accountable records and exception handling                                                                              |
| SMI purchase of buyer-acceptable GCB under a separate, disclosed sale                     | Aggregation, minimum acceptance consistency, storage, and delivery coordination                                              |
| Continued livelihood diversification where compatible with agronomy and milestones        | Reduced sourcing, monitoring, exception, and transaction-coordination burden                                                 |
| A total-value proposition capable of competing with traders' price and immediate cash     | A service package that may justify premium, minimum volume, longer term, faster payment, financing, or shared assurance cost |

The two-sided rule is fundamental: if only one side perceives value, Roots2Beans does not converge. Farmer adoption without credible demand creates exposure and mistrust; buyer interest without acceptable farmer terms creates a supply promise that cannot be delivered.

#### 4.4 GAMMOT's role

GAMMOT is the workflow, evidence, and traceability layer, not the entire Roots2Beans business model. It is intended to provide SMI with the baseline evidence for approving milestone-based work compensation. Its minimum workflow should register the farmer/farm, identify the production unit, link the appropriate identifier, record prescribed work and evidence, show validation status, support correction and appeal, link an approved milestone to payment status, flag exceptions, and connect harvest/GCB lots to authorized traceability information. The future study must evaluate effectiveness, comprehension, record integrity, trust, burden, and perceived surveillance risk; a successful NFC tap alone proves none of these.

#### 4.5 Theory of change

If eligible farmers receive clear and fair milestone-based compensation for prescribed farm work that is verified through GAMMOT, the long income gap before coffee harvest may become less burdensome. The expectancy chain must be credible: effort leads to acceptable evidence, acceptable evidence leads to approval, and approval leads to timely payment, with correction and appeal when records are disputed. If SMI also buys buyer-acceptable GCB under transparent terms, the two-part income arrangement may improve perceived value and retention relative to competing channels. On the other side, if Roots2Beans credibly reduces buyer uncertainty over specification, traceability, volume, timing, and coordination, qualified buyers may offer a price premium or equivalent commercial commitment. The model is viable only when that captured buyer value can sustain farmer benefits and fully loaded

operations. Actual income stability, retention, quality, delivery, and economics can be determined only in the later operational pilot.

The theoretical base combines two-sided-market logic; transaction-cost economics; value-based pricing; income/consumption smoothing and liquidity constraints; expectancy theory; commitment-trust; principal-agent and information-asymmetry controls; contract-farming and side-selling logic; and technology acceptance/task usability. These lenses explain both the potential value and the risks: weak buyer willingness to pay, delayed or rejected farmer payments, opaque monitoring, record error, buyer rejection, switching to immediate-cash channels, working-capital shortfall, or excessive control can reverse the intended benefit.

#### 4.6 Separate buyer and farmer exposure architecture

| Audience and exposure                | Purpose                                                                                                                                              | What may be measured                                                                                                                              |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Farmer 1 - neutral concept           | Measure spontaneous comprehension and initial relevance without brand or complete terms.                                                             | Open recall, relevance, credibility, differentiation, questions, concerns, and initial willingness.                                               |
| Farmer 2 - full exchange             | Disclose milestone work, verification/payment, GCB purchase, data, intercropping, delivery, rejection, competing-offer, and exit terms.              | Comprehension, fairness, trust, conditional participation, switching threshold, onboarding step, objections, and change from initial willingness. |
| Buyer 1 - neutral integrator concept | Test whether the proposed service solves a material procurement problem before showing a price or named anchor.                                      | Problem relevance, differentiation, credibility, required specification, proof burden, and initial evaluation.                                    |
| Buyer 2 - approved service packages  | Vary feasible specification, assurance, traceability, volume, delivery, contract, price/premium, payment, financing, and risk terms.                 | Trade-offs, premium or equivalent commitment, decision authority, objections, and willingness to take a documented commercial next step.          |
| Role-based GAMMOT workflow           | Observe farmer, validator, procurement, and payment handoffs from evidence capture to approval, payment status, traceability, correction, and audit. | Independent task completion, errors, time, record integrity, access control, trust, burden, and improvement requirements.                         |

## 5. Management decision, research questions, and hypotheses

### 5.1 Management decision

**DECISION REQUIRED** Which qualified buyer segment, GCB specification, farmer profile, and service configuration should SMI prioritize for a controlled Roots2Beans pilot, and can the value created for buyers support the farmer benefits, technology, operations, and risks required to deliver it? The current LT4A project designs that decision process; it does not issue the decision.

## 5.2 Primary research question

Under what conditions can Roots2Beans create sufficient and compatible value for eligible coffee farmers and qualified institutional GCB buyers, and which buyer-specification-farmer configuration should SMI prioritize for a controlled regional pilot?

## 5.3 Subquestions

1. Farmer value: Which seasonal-income, production-support, financing, technical-assistance, and market-access problems create meaningful farmer demand for Roots2Beans?
2. Buyer value: Which specification, quality-assurance, traceability, volume, delivery, reliability, and coordination problems create meaningful institutional-buyer demand?
3. Buyer willingness to pay: Are qualified buyers willing to pay a premium or provide an equivalent commercial commitment for specification-aligned, quality-assured, traceable, and more reliable GCB?
4. Farmer exchange and retention: Do milestone compensation, support services, transparent GCB purchasing, and market access create enough total value for farmers to remain when traders or other buyers offer higher prices or faster cash?
5. GAMMOT and process readiness: Can farmers, field validators, procurement personnel, and payment personnel complete the evidence-to-payment and traceability workflow independently and correctly?
6. Economic and ecosystem viability: Can buyer value, farmer value, technology, buyer coverage, legal governance, operating capacity, and downside funding converge into a viable controlled pilot?

## 5.4 Directional hypotheses and governing proposition

| Code                        | Working statement                                                                                                                                                                                                               | Required evidence                                                                                                               |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| H1 - Farmer value           | Farmers experiencing larger seasonal cash gaps, input constraints, weak technical support, or uncertain market access will perceive greater value in the Roots2Beans bundle.                                                    | Cash-flow and livelihood calendars; current-channel evidence; survey measures of needs, bundle value, and informed willingness. |
| H2 - Fair exchange          | Clear milestone rules, timely compensation, transparent GCB purchasing, correction/appeal, and respect for livelihood activities will increase farmer trust and informed willingness.                                           | Teach-back, term reactions, trust/fairness scales, paired concept-to-full-terms change, and qualitative explanations.           |
| H3 - Buyer value            | Buyers facing unreliable volume, inconsistent specification compliance, weak traceability, or high coordination cost will perceive greater value in Roots2Beans.                                                                | Buyer problem evidence, requirement matrix, current sourcing burden, concept response, and authorized records.                  |
| H4 - Buyer commercial value | Buyer willingness to pay a premium or provide an equivalent commitment will increase when Roots2Beans credibly improves specification assurance, traceability, volume reliability, delivery predictability, and accountability. | Structured price/premium ladder, package trade-offs, procurement constraints, and documented commercial-next-step evidence.     |

| Code                       | Working statement                                                                                                                                                                                                     | Required evidence                                                                                                             |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| H5 - Farmer retention      | Retention will be stronger when milestone compensation, support, fair GCB price, reliable purchase, and reciprocal commitment outweigh higher spot prices or faster cash from competing buyers.                       | Realistic competing-offer scenarios varying price gap, payment speed, prior support, contract fairness, and market certainty. |
| H6 - GAMMOT readiness      | After one formative redesign, at least 80% of fresh validation users will independently complete every critical role-appropriate task, with no unresolved Severity-1 issue.                                           | Round-2 task-level completion, error, assistance, time, record/payment comprehension, access control, and debrief evidence.   |
| H7 - Economic sufficiency  | Buyer premium or equivalent commercial value must cover the fully loaded farmer-support, technology, aggregation, quality-assurance, traceability, financing, and operating costs under approved downside conditions. | Authorized buyer commitments, cost model, monthly cash bridge, sensitivity cases, and owner-approved sustainability floor.    |
| P8 - Two-sided convergence | SMI should proceed only when farmer acceptance, buyer commitment, specification fit, GAMMOT, legal safeguards, operations, and downside economics pass together.                                                      | Predetermined joint decision matrix retaining contradictory and unfavorable evidence.                                         |

## 5.5 Claim boundaries

- This document can guide a future study; it cannot itself support a pilot decision because it contains no primary research results.
- The future study can support a bounded regional pilot decision; it cannot estimate national farmer adoption.
- Stated willingness and a nonbinding expression of interest are stronger than concept liking but weaker than sustained enrollment, milestone completion/payment, or GCB delivery behavior.
- Buyer concept appeal or stated premium tolerance is not committed demand. A buyer counts toward coverage only through authorized evidence of a defined commercial next step, product, volume, timing, and value.
- Task-based usability can establish payment-verification workflow readiness under test conditions; it cannot establish season-long data completeness, work compliance, payment performance, or field support burden.
- Nestle is an anchor reference pathway, not the predetermined sole target. The label 'guaranteed offtake' may be used only if the arrangement is documented, authorized, and complete enough to establish covered volume and operative conditions.
- Commercial Robusta is an initial reference specification. The future study must not rule out another GCB specification that creates a stronger buyer-farmer fit and remains operationally feasible.
- Any claim that cannot be supported by an approved project source, authorized record, independently traceable source, or future-study evidence must remain an assumption or be removed.

- The research cannot determine whether farmers are employees, contractors, growers, or another legal category. Philippine counsel must review the actual relationship; describing payment as per-task or per-milestone does not settle legal status.
- Indicative economics support an investment screen; actual income stability and unit economics require observed pilot payments, costs, yield, GCB acceptance, purchase, delivery, and buyer collection timing.

## 5.6 Legal terminology and classification safeguard

The working paper uses 'milestone-based work compensation' or 'task-based growership payment,' not 'salary,' pending legal advice. Philippine employment classification depends on the total relationship. The Supreme Court's four-fold test considers selection and engagement, payment of wages, power of dismissal, and the power to control conduct, with control commonly the most significant factor; the payment mode alone is not decisive. Before the full-terms stimulus is frozen, counsel should review who prescribes the work, supervises or disciplines farmers, approves/rejects evidence, controls schedule and method, owns tools/inputs, bears production risk, and can terminate participation.

# 6. Methodological framework and justification

## 6.1 Formal design

The recommended design is a pragmatic exploratory sequential multiphase mixed-methods study with an embedded task-based usability component and a final decision-synthesis phase. It is pragmatic because the method is selected around a management decision rather than allegiance to one philosophical tradition. It is exploratory sequential because early qualitative work identifies buyer requirements, farmer language, meanings, risks, and terms that must shape the survey. It is multiphase because the study includes distinct commercial, adoption, usability, and integration workstreams.

## 6.2 Why this design fits

- Anchor-path procurement/acceptance conditions and farmer concerns are context-specific and must be explored before they can be measured consistently.
- Buyer segmentation and commercial-value discovery must precede corridor selection because the most viable buyer, specification, and contract package are not yet fixed.
- A survey is necessary to estimate directional prevalence within the bounded catchment and compare predefined profile groups, but it cannot explain why respondents accept or reject terms.

- Observed GAMMOT tasks are necessary because intention, confidence, or satisfaction cannot demonstrate successful use.
- Integration is necessary because the management decision depends on convergence across two market sides, a technology layer, operations, and economics.

### 6.3 Analogous research precedent

| Analogous study                                               | Methodological precedent                                                                                                                                                                                                  | Roots2Beans adaptation                                                                                                                                                  |
|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Anderson, Jain, and Chintagunta (1993), business-market value | Customer-value assessment in business markets emphasizes translating differentiated performance into economic value relative to the buyer's next-best alternative.                                                        | Supports testing both per-kilogram premium and equivalent commercial commitments against the buyer's current sourcing costs, risks, and alternatives.                   |
| Cimino et al. (2024), digital agricultural platforms          | Survey of 192 small farmers using an extended UTAUT model; examined performance expectancy, effort expectancy, social influence, environmental uncertainty, and network prominence.                                       | Supports measuring value/usefulness, effort, social/facilitating conditions, uncertainty, and adoption intention - while adding full-terms disclosure and observed use. |
| Abetu et al. (2024), bundled agricultural inputs and services | Conjoint experiment with 252 Ethiopian smallholders; showed that service bundles can improve preference but must be designed from smallholder trade-offs.                                                                 | Supports a structured term-card or forced-choice exercise rather than asking only whether farmers like an all-benefit bundle.                                           |
| Tadesse et al. (2024), Ethiopian coffee traceability          | Literature review plus logistics audit mapped information flow and traceability maturity; identified affordability, awareness, stakeholder resistance, infrastructure, access, and policy barriers.                       | Supports mapping the minimum traceability workflow and testing readiness, burden, access, and governance rather than assuming a fully digital endpoint.                 |
| Chazovachii et al. (2021), centralized contract farming       | Mixed methods using questionnaires, KIIs, document review, and FGDs to examine sustainability from farmer, extension, and firm perspectives; highlighted risks of unfavorable terms despite access to inputs and markets. | Supports two-sided evidence, private discussion of sensitive terms, document/term review, and explicit fairness and rejection conditions.                               |

### 6.4 Alternatives considered and rejected

| Alternative                               | Why it is insufficient for this decision                                                                                                                                                       |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| All-qualitative study                     | Provides depth and language but cannot show the directional prevalence of conditions or compare farmer profiles with adequate transparency.                                                    |
| Survey-only study                         | Risks measuring the wrong constructs, under-disclosing obligations, and confusing stated intention with observed usability or commercial behavior.                                             |
| Technology-usability-only study           | Could optimize GAMMOT while ignoring milestone fairness, the separate GCB sale, documentary offtake, legal status, and working capital.                                                        |
| National probability survey               | Would answer a different question, require a credible national frame and substantially more resources, and still would not establish buyer commitment, operating feasibility, or observed use. |
| Experiment or randomized controlled trial | Premature because the operating model, treatments, terms, compliance mechanisms, and stable outcomes are not yet finalized; randomization would not solve concept and feasibility uncertainty. |
| Immediate 10-farm/1,000-tree pilot        | Executes the proposed investment before the research has determined whether farmer, buyer, technology, operational, and economic conditions justify it.                                        |

## 6.5 Phase-by-phase design

| Phase                          | Method and respondents                                                                                                                                                                                                                                           | Primary output                                                                                                                                                       |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0. Evidence and protocol       | Current primary-source market/comparator review; classify buyer/offtake evidence; confirm farmer and GCB terms, legal review, sampling, ethics, and action standards using only the approved evidence base.                                                      | Approved protocol, source ledger, legal/commercial prerequisites, stimuli, screeners, field manuals, and decision rules.                                             |
| 1. Buyer landscape and value   | Approximately 12-18 purposive KIs across about 8-12 qualified organizations and three to four buyer archetypes; include Nestle as an anchor reference plus procurement, quality, planning, logistics, finance, contract, sustainability, and traceability roles. | Buyer segments, requirement matrix, sourcing problems, specification options, premium/equivalent-value evidence, authority map, and documented next-step candidates. |
| 2. Farmer exploration          | Four FGDs of 6-8 plus approximately eight IDIs across the two regions and varied selling/digital profiles.                                                                                                                                                       | Farmer language, needs, trust/fairness concerns, sensitive risks, term reactions, and survey-item development.                                                       |
| 3. Farmer measurement          | Recommended n=240 structured survey after cognitive and field pretests; standardized neutral-concept/full-terms sequence and realistic competing-offer scenarios.                                                                                                | Directional prevalence, paired change, retention thresholds, profile differences, exploratory behavioral profiles, and qualified expression-of-interest pool.        |
| 4. GAMMOT process verification | Twenty-four intended farmer users in two fresh-sample rounds of 12, plus fresh validator, procurement, and payment role-holders needed to rehearse handoffs.                                                                                                     | Task-level evidence-to-payment and traceability completion, errors, access control, comprehension, integrity, trust, burden, and fixes.                              |
| 5. Value matching and decision | Buyer-farmer requirement joint display; buyer coverage and commercial-value evidence; GAMMOT, legal/governance, operating, and downside economic review; SMI decision workshop.                                                                                  | Future output: recommended buyer-specification-farmer corridor, proceed/revise/narrow/pause decision, minimum viable pilot, unresolved risks, and next evidence.     |

## 7. Target population, sampling, and sample-size defense

### 7.1 Units of inquiry

- Qualified institutional buyer organization is a co-primary market unit; role-holders provide requirement and decision-process evidence, while authorized documents provide stronger evidence of commitment.
- The SMI-Nestle pathway is an anchor reference case within the buyer landscape, not the sole commercial validation case.
- Farmer is a co-primary adoption and retention unit; the farm is the operating context.
- A GAMMOT task or record is a process observation, not an additional independent farmer respondent.
- The pilot catchment - not the entire Philippine coffee-farmer population - is the intended inference boundary.

## 7.2 Farmer eligibility

Recommended core eligibility criteria, to be finalized with SMI and field partners:

- Age 18 or older and personally authorized to decide about farm participation, prescribed work, evidence/data use, intercropping/labor allocation, and GCB sale.
- Active coffee farmer or farm decision-maker in Agusan del Norte or the Davao Region.
- Coffee is currently produced, rehabilitated, or planned at a scale relevant to the proposed pilot; approximately 1-3 ha and Robusta may be screened as working hypotheses, not fixed segment definitions.
- Able to complete the interview in the approved field language and provide informed consent.
- Not an SMI employee, interviewer, immediate fieldwork implementer, or person compelled to participate by a buyer, lender, cooperative, or government official.

## 7.3 Buyer sampling

Commercial sampling is purposive, organization-based, and role-based. The working target is approximately 8-12 qualified buyer organizations and 12-18 buyer/ecosystem KIs across three to four archetypes, subject to the accessible market universe. Include processors or manufacturers, exporters or aggregators, institutional roasters or other direct GCB buyers, and the Nestle anchor pathway. Cover procurement, technical acceptance/quality, supply planning, logistics, finance, contracting, sustainability, and traceability roles. One participant may cover multiple roles, but an organization-role-evidence matrix must expose gaps. The unit is not a vote count: authorized specifications, term sheets, transaction records, and commitments outrank verbal enthusiasm. Cafes or food-service chains qualify only when they directly procure or specify GCB at a meaningful scale.

## 7.4 Farmer qualitative sampling

Four FGDs of six to eight participants provide approximately 24-32 group participants. Groups should be separated by region and, where feasible, by selling arrangement or objective digital-readiness profile. Eight IDIs should deliberately include farmers with pronounced seasonal cash gaps, intercropping/food-production obligations, past payment or contract disputes, lower confidence discussing technology, privacy concern, or disagreement with the concept. Saturation should be documented by topic and profile rather than asserted from the target count alone.

## 7.5 Farmer survey sample-size recommendation

Brief v5.2 specifies approximately 100-120 farmers and correctly limits the result to directional evidence. That sample may be adequate for an early canvass but is weak once the study promises

quotas and segmentation. With eight design cells,  $n=120$  yields only about 15 farmers per cell before exclusions or missing data;  $n=100$  yields about 12-13. Such cells are unstable and invite panel questions about subgroup claims.

The working recommendation is  $n=240$  completed surveys. This is not because the national population is large; once populations are large, required probability-sample size changes little. The reason is design utility: eight quota cells of approximately 30 each, enough total cases for directional comparisons and a modest multivariable model, and room for transparent reporting of uncertainty. Because recruitment remains purposive/quota-assisted, conventional confidence intervals describe sample precision only and do not confer national representativeness.

**NATIONAL BENCHMARK VERSUS PROJECT DESIGN** Under simple random sampling with  $p=.50$ , 95% confidence, and  $\pm 5$  percentage points,  $n_0 = 1.96^2 \times .50 \times .50 / .05^2 = 384.16$ , conventionally rounded to 385 before design effect and nonresponse. Roots2Beans is not designed as that national probability study. Its recommended  $n=240$  supports a bounded pilot-catchment decision and must be described accordingly.

## 7.6 Proposed farmer quota architecture

| Quota dimension             | Level 1                                           | Level 2                                  | Design use                                                                                            |
|-----------------------------|---------------------------------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Region                      | Agusan del Norte                                  | Davao Region                             | Ensures both approved pilot catchments contribute equally or according to an approved allocation.     |
| Current selling arrangement | Organized: cooperative/association/direct program | Independent: trader-led or self-arranged | Captures differences in coordination experience and market dependence.                                |
| Digital readiness           | Lower readiness                                   | Higher readiness                         | Measured before GAMMOT exposure using objective device/use questions, not a subjective adopter label. |

Crossing the three binary dimensions yields eight cells. A balanced design assigns approximately 30 completed surveys per cell. Farm size, coffee type, age, gender, tenure, yield band, credit experience, and quality orientation should be monitored and reported; they should not all become hard quotas unless recruitment capacity can support the resulting fragmentation.

## 7.7 Recruitment and external-validity boundaries

- Use multiple recruitment sources: cooperative/association lists, LGU or extension lists, SMI contacts, community leaders, and independent farmer referrals.
- Record recruitment source and compare key outcomes across sources to detect sponsor or cooperative-selection effects.

- Do not allow field partners to observe responses or imply that participation affects eligibility for finance, inputs, market access, or government support.
- Report refusals, ineligibility, incomplete interviews, and quota substitutions.
- Generalize analytically to similar eligible farmers and operational conditions, not statistically to all Philippine coffee farmers.

## 7.8 GAMMOT usability sample

The recommended 24-person design sits within the brief's 20-30 range. Round 1 uses 12 participants to diagnose breakdowns across region and digital-readiness profiles, followed by documented interface, training, or process changes. Round 2 uses 12 new participants who have not seen the prior version. Passing 80% means at least 10 of 12 fresh participants complete each critical task independently. This is an operational readiness gate, not a precise population prevalence estimate; task-level evidence and error severity matter more than a single average percentage.

# 8. Stimuli, instruments, and future fieldwork

## 8.1 Desk-research and evidence protocol

- Verify every market number against a traceable source, date, geography, definition, and unit.
- Trace every inherited claim to its direct approved source or classify it as an assumption to test; excluded or superseded material must not enter the evidence ledger or references.
- Map alternative channels and comparable growership/traceability models using explicit scoring criteria rather than unsourced High/Medium/Low judgments.
- Obtain and classify Nestle anchor evidence and any alternative buyer evidence: executed contract, purchase commitment, term sheet, letter of intent, memorandum, or verbal assertion. Extract product/specification, volume, duration, acceptance, delivery, value, rejection, payment, termination, and force-majeure conditions.
- Create a qualified-buyer universe, buyer-archetype and role map, farmer recruitment frame, and source-quality ledger.
- Complete Philippine legal review of the proposed farmer relationship before exposing respondents to full terms; record which provisions are approved, revised, or unresolved.
- Freeze the management decision, final stimuli, disclosure sequence, quotas, action standards, and analysis plan before fieldwork.

## 8.2 Buyer-landscape KII and commercial-value guide

The buyer guide should move from current sourcing problems to requirements, concept evaluation, commercial value, and an auditable next step:

- Organization, role, decision authority, current sourcing model, supplier alternatives, unresolved procurement problems, and cost/risk of the status quo.
- Required GCB species/specification, moisture, defects, processing/conditioning, lot, food safety, documentation, traceability, annual/seasonal volume, delivery frequency, and location.
- Neutral Roots2Beans concept evaluation: relevance, differentiation, proof required, implementation burden, objections, and conditions for trial.
- Approved package evaluation varying specification assurance, traceability depth, volume reliability, delivery predictability, contract duration, price/premium, financing, payment, rejection, and service-cost sharing.
- Structured price or premium ladder and trade-offs among price, assurance, traceability, volume, payment, and contract duration; record procurement-policy ceilings and budget authority.
- Willingness to take a documented commercial next step, such as data sharing, specification confirmation, sample evaluation, pilot letter, term-sheet discussion, or authorized purchase commitment.
- For the Nestle anchor pathway, verify the declared 'pick all' practice and all operative conditions directly; do not import specialty or 'pick red' assumptions.

## 8.3 Farmer FGD and IDI guides

The farmer flow should protect spontaneous evidence and sensitive disclosure:

- Current farm, coffee calendar, intercropping, household food/income sources, seasonal cash-flow and labor peaks, production, selling, support, record-keeping, and decision experience.
- Unbranded neutral concept exposure, open-ended comprehension, relevance, credibility, and questions.
- Standardized full benefits and obligations disclosure, using plain-language term cards and teach-back questions.
- Milestone value/frequency, prescribed work, evidence, verification, approval, rejection, correction, appeal, payment timing, hidden-deduction, monitoring, privacy/surveillance, and record-integrity concerns.
- Separate SMI GCB purchase terms, buyer acceptance, delivery, rejection, price formula, deductions, payment, side-selling, exit, and dispute concerns.
- Realistic competing-offer scenarios varying alternative-buyer price, immediate versus delayed payment, prior Roots2Beans support, contract fairness, market certainty, and exit conditions.

- Conditional participation and the specific term changes or safeguards required for an onboarding step.
- Private IDI follow-up for issues that may be suppressed by group dynamics or cooperative/sponsor presence.

## 8.4 Farmer survey modules

| Module                                      | Core measures                                                                                                                                                                                                                                             |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A. Screener and profile                     | Region, decision role, farm/farm size, crop/type, tenure, yield band, selling arrangement, cooperative status, credit experience, device access, and language.                                                                                            |
| B. Seasonal livelihood and current behavior | Coffee/intercrop calendar, household food/income sources, labor peaks, seasonal cash gaps, liquidity pressure, support history, current buyer/channel, actual payment timing, competitive prices, deductions/rejections, record-keeping, and unmet needs. |
| C. Neutral concept                          | Unaided comprehension; relevance, credibility, uniqueness, trust, perceived value, initial willingness, and open concerns.                                                                                                                                |
| D. Full milestone terms                     | Teach-back of prescribed work, milestone value/frequency, evidence, validation, rejection, correction/appeal, deductions, timing, monitoring, data, privacy, suspension, exit, and dispute terms.                                                         |
| E. Separate GCB purchase                    | Teach-back that harvest proceeds are separate; buyer acceptance, delivery, volume, price formula, deductions, rejection/remediation, payment timing, and side-selling terms.                                                                              |
| F. Adoption and retention                   | Post-disclosure likelihood, onboarding step, EOI, decision influencers, stay/switch/withdraw conditions, and choices under approved competing-offer scenarios.                                                                                            |
| G. Behavioral constructs                    | Income-smoothing value, payment expectancy/fairness, effort/burden, facilitating support, trust, uncertainty, record/data confidence, surveillance risk, livelihood compatibility, and current-channel dependence.                                        |
| H. Term trade-offs                          | Forced choices or structured ranking among legally approved, operationally realistic bundles; no attribute should be tested without SMI's ability to deliver it.                                                                                          |

## 8.5 Concept and terms standardization

All moderators and survey interviewers must use the same wording, order, visuals, definitions, examples, and response scales. A comprehension question must precede willingness. When a respondent misunderstands a material term, the interviewer should provide only the approved clarification and record that clarification. The survey should preserve initial neutral-concept measures before full disclosure so the analysis can quantify the change rather than asking respondents to remember it.

## 8.6 GAMMOT task protocol

| Task                             | Success criterion                                            | Observed diagnostics                                                   |
|----------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------|
| Register or retrieve farmer/farm | Correct record selected or created without moderator action. | Completion, assistance, navigation error, time, confidence.            |
| Link NFC tag                     | Correct tag linked to the intended farm/tree/unit.           | Wrong-link risk, scan/read failure, recovery, explanation of identity. |

| Task                                | Success criterion                                                                                                                                        | Observed diagnostics                                                                          |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Record milestone evidence           | Prescribed activity, date/time, production unit, responsible user, and required evidence are recorded correctly.                                         | Missing/false fields, burden, offline/network handling, terminology confusion.                |
| Review and validate milestone       | Authorized user retrieves the correct record, verifies required evidence, and applies the correct status without bypassing controls.                     | Record integrity, role separation, wrong approval/rejection, audit trail.                     |
| Correct or appeal                   | User identifies the reason for rejection, follows the correction/appeal path, and can locate the updated status.                                         | Explainability, procedural fairness, turnaround expectation, recovery failure.                |
| Explain payment consequence         | Participant accurately explains how approved evidence relates to milestone payment, who can see the record, and what happens after rejection or dispute. | Payment expectancy, hidden deduction, privacy/surveillance, false guarantee misunderstanding. |
| Retrieve payment and GCB-lot status | User distinguishes milestone-payment status from the separate GCB purchase and retrieves authorized lot/transaction information.                         | Conflation of income streams, findability, access control, traceability comprehension.        |

During task measurement, researchers should not coach unless the participant is blocked under the pre-agreed rule. Assistance is recorded, not hidden. Non-compliance, refusal, distrust, and error are data. Round-1 changes must be documented before Round 2 so improvement cannot be attributed ambiguously.

## 8.7 Pretest and field-quality sequence

1. Expert/content review by the research lead, SMI operating owners, GAMMOT owner, ethics/data-governance owner, and at least one independent research reviewer.
2. Cognitive interviews with approximately 8-12 eligible farmers to test language, interpretation, sensitivity, recall, scales, and teach-back items.
3. Pilot field test with approximately 20 respondents outside the final analytical sample to test length, skip logic, quota capture, interviewer instructions, and data quality.
4. Translation and back-translation for the approved field language(s), followed by reconciliation with local researchers; do not assume one Mindanao language covers both catchments.
5. Interviewer/moderator certification using role-play, consent, neutral probing, disclosure, technology-assistance, safety, and escalation scenarios.

## 9. Data analysis and integration

### 9.1 Qualitative analysis

Buyer KIIs, farmer FGDs, and IDIs should be transcribed or expanded from verified recordings and field notes, translated where necessary, and analyzed using a framework/thematic approach. The buyer

framework should compare sourcing problems, required specifications, traceability, assurance, volume, timing, coordination cost, premium/equivalent value, procurement constraints, and commercial-next-step authority across archetypes. The farmer framework should cover seasonal cash gaps, livelihood compatibility, milestone value, payment expectancy, verification, fairness, trust, competing offers, GCB purchase, and refusal conditions. Negative cases and buyer-farmer contradictions must be retained.

## 9.2 Quantitative analysis

- Describe every item using valid denominators, missingness, distribution, and uncertainty; avoid percentages without counts.
- Use paired analysis for neutral-concept versus full-terms measures: change in top-two-box willingness, Wilcoxon signed-rank for ordinal scores, or McNemar-type tests for paired binary outcomes, as appropriate.
- Report effect sizes and confidence intervals where defensible; avoid treating statistical significance as managerial importance.
- Compare quota/profile groups using cross-tabs, chi-square or Fisher's exact tests, nonparametric or parametric comparisons as distribution and cell size permit.
- Use multivariable logistic or ordinal regression only when event counts and diagnostics support it; label associations, not causal effects.
- Assess multi-item scales using item-total behavior and Cronbach's alpha and/or McDonald's omega, with a working reliability standard of at least 0.70. Revise or report weak scales transparently.
- Behavioral segmentation is exploratory. Use observed needs, behaviors, trust, financing experience, term reactions, and digital readiness; test cluster stability and practical interpretability. If stability is poor, report profiles rather than force named segments.
- Estimate farmer switching curves across competing-offer scenarios and report the price/payment point at which retention materially declines; do not label this as observed side-selling behavior.
- Summarize buyer price/premium ladders and service-package trade-offs at organization level; do not convert a small purposive buyer sample into population percentages.
- Model farmer H1, H2, and H5 only as associations. Include milestone amount/frequency/work burden and relevant profile controls; test interactions only if cell sizes support them.

## 9.3 Usability analysis

- Compute task-level independent completion, completion with assistance, failure, time, and error severity for each round.
- Report every critical task separately; a high overall average cannot conceal failure of a privacy, identity, or record-integrity task.

- Compare Round 1 and Round 2 descriptively, while recognizing that fresh participants and iterative changes prevent a simple within-subject test.
- Link quantitative task outcomes to debrief themes such as terminology, trust, burden, device/network constraints, and support needs.

## 9.4 RQ-method-analysis-decision matrix

| Research question            | Evidence and analysis                                                                                                                       | Decision use                                                                                |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| RQ1 - Farmer value           | FGD/IDI livelihood and cash-flow calendars; survey need/value measures; current-channel evidence and profile analysis.                      | Identifies the farmer profiles and bundle elements with material value.                     |
| RQ2 - Buyer value            | Buyer archetype comparison; sourcing-problem and requirement matrix; concept response and proof requirements.                               | Identifies the buyer segments, specifications, and service elements worth targeting.        |
| RQ3 - Buyer commercial value | Price/premium ladder; feasible package trade-offs; procurement constraints; authorized next-step and buyer-coverage evidence.               | Determines the commercial value available to fund the model.                                |
| RQ4 - Farmer retention       | Full-term teach-back; trust/fairness; competing-offer scenarios; switching curves; refusal and withdrawal conditions.                       | Determines whether the total farmer value can withstand realistic spot-market alternatives. |
| RQ5 - GAMMOT/process         | Role-level completion, assistance, failure, time, error severity, access control, payment/traceability comprehension, and fresh validation. | Determines interface, training, process, access-control, and governance readiness.          |
| RQ6 - Ecosystem viability    | Buyer-farmer value match; legal review; capacity/support model; downside cash-flow; unresolved-risk register.                               | Selects the corridor and determines proceed/revise/narrow/pause.                            |

## 9.5 Integration rule

Integration should use a buyer-farmer value-matching matrix and joint evidence display listing buyer requirements, farmer capability or burden, the Roots2Beans intervention, fully loaded cost, evidence strength, contradictions, and gate status. Divergence must be explained rather than averaged away. High farmer willingness cannot offset weak buyer value or inadequate coverage; high buyer interest cannot offset unfair farmer terms; stated GAMMOT satisfaction cannot offset task failure; and a verbal buyer assertion cannot fund the model. The selected corridor must be simultaneously desirable, feasible, legally governable, and economically sufficient.

## 10. Rigor, validity, reliability, and field-quality controls

| Rubric standard         | Concrete Roots2Beans procedure                                                                                                                                         | Audit evidence                                                                     |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Qualitative credibility | Triangulate buyer, FGD, IDI, survey, and observed-use evidence; use respondent teach-back; conduct summary member checks where appropriate; search for negative cases. | Source-tagged codebook, contradiction log, member-check record, and joint display. |

| Rubric standard    | Concrete Roots2Beans procedure                                                                                                                                                                         | Audit evidence                                                                              |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Transferability    | Record region, farm size, crop/type, channel, cooperative status, credit history, digital readiness, interview setting, and recruitment source.                                                        | Thick-description profile table and explicit claim boundary.                                |
| Dependability      | Freeze protocols; train/certify researchers; version guides and stimuli; record deviations; retain a fieldwork and analysis audit trail.                                                               | Version log, training records, deviation log, decision log, and reproducible analysis file. |
| Confirmability     | Predetermine thresholds; declare sponsor interest; dual-code at least 20% of qualitative material; reconcile disagreements; retain unfavorable evidence and reflexive notes.                           | Coder agreement/reconciliation record, reflexivity memo, and full evidence matrix.          |
| Internal validity  | Use one exposure sequence; prevent interviewer coaching; preserve pre/post measures; record clarification; separate research participation from program eligibility.                                   | Field manual, interviewer monitoring, and exposure-version checks.                          |
| External validity  | Use multiple recruitment sources and planned quotas; report selection, refusals, nonresponse, and subgroup composition; avoid national inference.                                                      | Sample disposition and recruitment-source comparison.                                       |
| Construct validity | Adapt constructs from analogous research; expert review; cognitive pretest; use multiple items for latent constructs; distinguish liking, intention, EOI, task performance, and actual pilot behavior. | Construct-item map, pretest log, and validity review.                                       |
| Reliability        | Standardize instruments; run pilot field test; examine item consistency and alpha/omega; apply field logic and coding checks.                                                                          | Instrument report, reliability output, data-cleaning log, and codebook.                     |

## 10.1 Field quality controls

- Daily quota, recruitment-source, duration, missingness, straight-line, and logic monitoring.
- Unique respondent and organization identifiers; documented duplicate checks; no reuse across test rounds unless explicitly designed.
- At least 10% independent back-checks for survey eligibility and selected non-sensitive responses, subject to consent.
- Audio or detailed-note verification for qualitative work, with secure transfer and deletion rules.
- Deviation and adverse-event escalation for consent, privacy, coercion, technology, field safety, or data-integrity issues.

## 11. Ethics, data governance, and bias control

### 11.1 Participant protection

- Use plain-language informed consent covering purpose, procedures, duration, recording, data use, risks, voluntary participation, withdrawal, contacts, and compensation.
- State explicitly that research answers do not determine eligibility, milestone approval/payment, GCB purchase, credit, inputs, growership, market access, cooperative membership, or government support.

- Do not permit cooperative leaders, SMI commercial staff, buyers, lenders, or officials to observe individual responses.
- Avoid hidden surveillance, punitive research-stage consequences, or fabricated compliance. Record non-compliance and understand its cause.
- Provide a private channel for questions or withdrawal, especially where recruitment occurs through an organization with power over the farmer.
- Do not call the proposed compensation a salary in participant materials unless legal counsel has approved the classification and terminology. Research participation incentives must remain separate from any simulated milestone payment.

## **11.2 GAMMOT data governance**

The consent and system explanation must specify what data are collected, why, who controls or processes them, who can access which fields, how long they are retained, how errors are corrected, how records affect decisions, and what happens after withdrawal. The working paper avoids asserting that the farmer legally owns all data because ownership, controller/processor roles, and access rights must be confirmed through SMI policy and applicable law. The governing research principles remain no undisclosed surveillance, no hidden penalty, and no fabricated compliance.

## **11.3 Commercial and sponsor bias**

SMI has a direct commercial interest in Roots2Beans. Bias control therefore requires predetermined standards, neutral concept wording, standardized disclosure, independent facilitation where feasible, separate field recruitment from commercial enrollment, retention of unfavorable findings, transparent coding and analysis decisions, and a report that includes reasons to pause. The study asks what evidence is sufficient to deserve the next investment, not how to prove that Roots2Beans works.

## **11.4 Legal and payment-governance prerequisite**

Before fieldwork, SMI should obtain Philippine legal advice on employment, growership/contracting, taxation, social-protection, wage, data-protection, agricultural-contract, and dispute implications. The research protocol can test comprehension and acceptability of counsel-approved terms; it cannot decide legal classification. Payment governance must define milestone owner, evidence standard, validator independence, approval authority, service level, audit trail, rejection reason, correction, appeal, override, fraud handling, payment proof, complaints, and non-retaliation.

## 12. Action standards

**STATUS OF THRESHOLDS** The standards below are a rigorous working proposal. Documentary, farmer, and GAMMOT thresholds can be operationalized now. Legal, operational, and economic limits require SMI inputs and approval before fieldwork. Changing a threshold after seeing results is not permitted without documenting the change as a post-hoc sensitivity analysis.

| Evidence stream                 | Provisional proceed threshold                                                                                                                                                                                                                                                              | Measurement and guardrail                                                                                                                                            |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Buyer coverage and commitment   | At least one authorized anchor arrangement plus a documented contingency or secondary pathway; combined buyer coverage equals at least 100% of planned pilot output and specifies product, volume, duration, acceptance, delivery, value, rejection/remediation, payment, and termination. | Authorized evidence outranks interview enthusiasm. An LOI or verbal assurance remains provisional and cannot be described as guaranteed offtake.                     |
| Buyer commercial value          | The price premium, service fee, minimum volume, contract term, faster payment, financing support, shared assurance cost, or equivalent value meets the fully loaded economic floor for the approved corridor.                                                                              | Show the buyer's next-best alternative, procurement constraints, authorized next step, and the monetary treatment of every non-price commitment.                     |
| Milestone-payment comprehension | At least 80% correctly explain prescribed work, required evidence, validation, milestone value, payment timing, rejection, correction/appeal, deductions, data access, and exit after approved clarification.                                                                              | Use scored teach-back. No respondent with material misunderstanding is counted as informed willingness; no unresolved high-harm pattern.                             |
| Two-income-stream comprehension | At least 80% correctly distinguish milestone-based work compensation from the separate harvest-season SMI purchase of buyer-acceptable GCB and explain both payment pathways.                                                                                                              | Do not present either payment as guaranteed beyond approved terms; record confusion after clarification.                                                             |
| Farmer adoption                 | At least 60% report top-two-box post-disclosure willingness to complete the defined pilot-onboarding step; qualified EOI pool is at least 1.5 times planned pilot slots; neutral-to-full decline is no more than 15 percentage points.                                                     | Report denominator, confidence interval, region/profile results, and reasons for change. Final threshold requires SMI approval.                                      |
| Retention and competing offers  | Report the price and payment-condition point at which stated retention materially declines; the approved farmer package remains viable under the SMI-defined realistic competing-offer scenario.                                                                                           | Use non-accusatory scenarios. Do not depend primarily on punitive exclusivity; test fair total value, reciprocal commitment, transparent exit, and reliable payment. |
| GAMMOT critical tasks           | In Round 2, at least 80% - at least 10 of 12 - independently complete every critical evidence-to-payment task; at least 80% explain status, access, correction/appeal, and payment consequence; zero unresolved Severity-1 issue.                                                          | Do not average tasks. Assistance disqualifies independent completion but remains a diagnostic; validate SMI handoffs and role separation separately.                 |
| Trust and fairness              | No recurring unresolved Severity-1 issue involving coercion, hidden deduction or penalty, payment misunderstanding, unfair rejection, delivery restriction, privacy, surveillance, record integrity, or data confidence.                                                                   | Severity is determined from consequence, frequency, and remediability; a small percentage does not neutralize a high-harm issue.                                     |
| Livelihood compatibility        | No prescribed milestone creates an unresolved material conflict with household food production, beneficial intercropping, essential labor obligations, or safe agronomic practice for the intended participant profile.                                                                    | Use seasonal calendars and negative cases; revise milestone timing/work design rather than interpreting diversification as non-compliance.                           |
| Legal/governance readiness      | Counsel has reviewed the actual relationship and all full-stimulus terms; payment, data, correction, appeal, complaint, non-retaliation, and role-separation rules have named owners and no unresolved Severity-1 issue.                                                                   | Research findings cannot cure an unlawful or ambiguous operating arrangement.                                                                                        |

| Evidence stream               | Provisional proceed threshold                                                                                                                                                                                                                                                                                           | Measurement and guardrail                                                                                                                                                                      |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operational readiness         | Onboarding, agronomy, evidence validation, payment, processing/conditioning, acceptance checks, aggregation, storage, traceability, delivery, and exceptions fit SMI-approved capacity ceilings. Working diagnostics: $\geq 95\%$ required-record completeness and $\leq 5\%$ critical tag/record failure in rehearsal. | SMI must approve onboarding time, validator/support ratios, payment and appeal turnaround, processing/storage capacity, and operating scale. Rehearsal does not prove season-long feasibility. |
| Downside economic sufficiency | Buyer-derived value covers 100% of fully loaded pilot costs and committed funds cover milestone compensation, farmer GCB purchases, and operating costs through approved buyer-payment delays and downside cases.                                                                                                       | Show unit economics, monthly cash bridge, peak exposure, buyer concentration, rejected/excess output, contingency, and SMI-approved contribution or sustainability floor.                      |

## 12.1 Severity definitions

| Severity              | Definition                                                                                                                                                                        | Decision treatment                                                       |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| Severity 1 - critical | Risk of participant harm, coercion, material financial misunderstanding, privacy/data breach, irreversible identity/record error, or failure that invalidates a core transaction. | Automatic no-go until resolved and revalidated.                          |
| Severity 2 - major    | A critical task cannot be completed without moderator intervention or creates a likely material operating error.                                                                  | Requires redesign/training change and fresh validation.                  |
| Severity 3 - moderate | Recoverable friction, delay, or confusion that does not compromise the transaction or participant rights.                                                                         | Prioritize before pilot; may pass only within approved rate/time limits. |
| Severity 4 - minor    | Cosmetic or preference issue with negligible consequence.                                                                                                                         | Track for backlog; not independently decision-blocking.                  |

## 13. Proceed, revise, narrow, or pause decision matrix

| Decision | Condition                                                                                                                                                                                                                       | Required output                                                                                                                                                    |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PROCEED  | One buyer-specification-farmer corridor passes every critical buyer value/coverage, farmer value/retention, GAMMOT, legal/governance, livelihood, operational, and downside-economic gate, with no unresolved Severity-1 issue. | Controlled minimum viable pilot specifying target buyer, GCB specification, farmer profile, service package, owners, funding, monitoring, and post-pilot evidence. |
| REVISE   | Two-sided potential exists, but one or more remediable service, term, interface, proof, governance, support, or economic gates miss.                                                                                            | Specific change, owner, re-test design, threshold, and deadline; no pilot before revalidation.                                                                     |
| NARROW   | Evidence converges only for a defined buyer archetype, GCB specification, farmer profile, region, contract package, or minimum service bundle.                                                                                  | Smaller named corridor and explicit exclusion of unsupported buyers, farmers, specifications, or features.                                                         |
| PAUSE    | Buyer value or coverage is insufficient; farmer willingness/comprehension/retention misses the floor; critical legal, payment, trust, privacy, or livelihood risk persists; or SMI cannot fund/deliver the model.               | Stop conditions, protected participant communication, documented learning, and evidence/redesign required before reconsideration.                                  |

The decision is conjunctive, not compensatory. High farmer willingness cannot offset weak buyer value, inadequate coverage, unlawful terms, or unusable payment verification. Buyer enthusiasm cannot offset farmer rejection, switching risk, or unaffordable delivery. Narrow is the mechanism for selecting the strongest buyer-specification-farmer corridor; revise and pause are legitimate evidence-based outcomes, not partial failures.

## 14. Timing, governance, budget, and deliverables

### 14.1 Illustrative six-week implementation schedule for the future commissioned study

| Period    | Work                                                                                                                                                                                                              | Gate/deliverable                                                                                                                   |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Weeks 1-2 | Allowed-source evidence review; buyer-universe and archetype map; anchor/alternative-document review; legal review; farmer and GCB terms; protocol, stimuli, ethics, instruments, and action standards; pretests. | Commissioning gate; source ledger, legally cleared terms, classified buyer evidence, frozen stimuli, standards, and field manuals. |
| Weeks 2-3 | Buyer-landscape and commercial-value KIIs; farmer FGDs and IDIs; ongoing framework analysis.                                                                                                                      | Buyer segment/requirement/value matrix and farmer construct/term map; survey/package revision gate.                                |
| Weeks 3-4 | Survey field pretest and launch; GAMMOT payment-verification Round 1; document system/training/process fixes.                                                                                                     | Final questionnaire; Round-1 issue/fix log.                                                                                        |
| Weeks 4-5 | Complete n=240 survey; GAMMOT Round 2 fresh validation; data cleaning; operating and downside cash-flow model.                                                                                                    | Locked future-study datasets; usability, capacity, and funding evidence.                                                           |
| Week 6    | Buyer-farmer value matching; qualitative/quantitative synthesis; documentary/legal integration; sensitivity analysis; SMI decision workshop; final report.                                                        | Recommended corridor, proceed/revise/narrow/pause decision, and minimum viable next step.                                          |

**SCHEDULE RISK** Six weeks is feasible only after the buyer universe, anchor evidence, counsel-cleared farmer terms, feasible buyer packages, GAMMOT prototype, buyer-role access, farmer recruitment lists, field partners, languages, budget, ethics/data rules, and SMI operating/economic inputs are ready. The current course project stops at the protocol. A later delay should revise the schedule rather than compress pretesting or analysis.

### 14.2 Governance

- SMI business owner: approves management decision, scope, terms, action standards, operating limits, economics, and final investment recommendation.
- LT4A: owns the GMKTG261 research blueprint and presentation. It does not own fieldwork, data collection, results, or the future management recommendation unless separately commissioned.

- Future SMI research lead or commissioned agency: owns protocol implementation, fieldwork supervision, analysis, integration, and transparent limitations.
- GAMMOT owner: supplies the test build, data-flow map, task definitions, error handling, system logs, and change control between rounds.
- Field partners: support access but do not select only favorable respondents, observe answers, coach participants, or link research response to benefits.
- Ethics/data owner: approves consent, role-based access, retention, withdrawal, incident response, and participant communication.
- Legal counsel: approves the proposed relationship and terminology, payment/governance terms, complaint/appeal design, and full-term stimulus before fieldwork.
- SMI finance/treasury owner: verifies funds, monthly cash bridge, payment controls, peak exposure, and downside contingency before pilot recommendation.

### 14.3 Budget modules

Brief v5.2 requires SMI to confirm the budget ceiling before commissioning. The budget should separately cost research design, source verification, instrument development, translation, pretesting, buyer recruitment, farmer recruitment/incentives, travel, venue, moderation/interviewing, survey fieldwork, GAMMOT setup/devices/tags/connectivity, transcription, data processing, analysis, decision workshop, taxes, contingency, and any optional field rehearsal. A single lump sum prevents the team from showing which evidence is lost when budget is reduced.

### 14.4 Deliverables

Current GMKTG261 deliverables:

- Research issue, questions, hypotheses, formal mixed-methods design, sampling plan, instruments, analysis plan, rigor and ethics controls.
- Offtake-document checklist, legal/governance prerequisite, action standards, decision matrix, illustrative timeline/budget modules, and panel-defense logic.
- Presentation working paper and final deck; no primary dataset, finding, or management recommendation.

Expected deliverables only after SMI commissions and implements the study:

- Verified market and alternative-model evidence ledger.
- Buyer segmentation, sourcing-problem and requirement matrix, premium/equivalent-value evidence, authorized next-step classification, coverage, and contingency pathways.
- Farmer qualitative findings, survey dataset, income-smoothing/payment-fairness evidence, comprehension, competing-offer response, profile comparisons, and EOI pool.

- GAMMOT payment-verification task results, severity log, Round-1 changes, Round-2 validation, and governance recommendations.
- Buyer-farmer value-matching matrix, recommended corridor, legal opinion/status, operating-capacity model, downside economic sensitivities, risk register, and proceed/revise/narrow/pause recommendation.
- Minimum viable pilot design and next evidence required to test actual enrollment, milestone completion/payment, GCB purchase, yield, acceptance, delivery, income stability, and sustained system use.

## 15. Limitations and interpretation

- This GMKTG261 document is a research design. Any numeric threshold, hypothesized relationship, expected output, or decision pathway is prospective and must not be narrated as a study result.
- Purposive/quota-assisted sampling limits population inference and may overrepresent farmers connected to organizations or SMI networks.
- Concept and survey responses remain hypothetical until respondents undertake a meaningful onboarding action and experience actual terms.
- Social desirability and power asymmetry may inflate favorable responses, particularly when respondents associate the study with finance, buyers, or government support.
- Buyer KIs represent purposively selected organizations and cannot estimate population prevalence. Only authorized documents establish binding commitment; interviews cannot validate another buyer's arrangement.
- Two-round usability testing reveals workflow readiness but not season-long compliance, field connectivity, tag durability, support burden, or record completeness.
- A six-week commissioned study cannot observe coffee yield, season-long milestone compliance/payment, income stability, crop loss, GCB acceptance/delivery, contract fulfillment, or repeat buyer behavior.
- Indicative economics depend on assumptions until pilot milestone payments, yields, GCB acceptance, purchase price, processing/conditioning, losses, logistics, and realized buyer-payment timing are observed.
- Intercropping effects are context-specific. The study should not infer that diversification harms coffee without agronomic, labor, household, and income evidence.
- Every market claim must be traced directly to an approved source with a visible date, geography, unit, and definition; superseded internal material cannot be used as an intermediate citation.

## 16. Predictable panel challenges and defensible answers

| Likely question                                                                   | Defensible response built into this design                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| How can 240 farmers represent the vast Philippine network?                        | It does not claim national representation. The study is a quota-assisted pilot-catchment design in two regions. n=240 is chosen for eight cells and directional comparisons; a national 95%/5% probability benchmark would be about 385 before design effects and requires a valid sampling frame.                                          |
| Why not retain n=100-120 from the brief?                                          | That number supports a canvass, but eight quota cells would contain only about 12-15 cases. n=240 materially improves subgroup defensibility without changing the study into a national survey.                                                                                                                                             |
| Why mixed methods?                                                                | Buyer and farmer qualitative work defines problems, requirements, and terms; the survey estimates directional farmer prevalence and switching thresholds; task testing observes use; documentary/legal/economic review tests non-perceptual gates; integration determines whether evidence converges. No single method answers all six RQs. |
| Where are your research results?                                                  | The course output is explicitly the blueprint for how SMI should conduct the study. Results belong to the future commissioned study; season-long outcomes belong to the later operational pilot.                                                                                                                                            |
| Why is the operational pilot not part of the six-week study?                      | The future study is meant to decide whether to invest in that pilot. A limited workflow rehearsal tests procedures; actual seasonal production, payment, and GCB outcomes must follow the gate.                                                                                                                                             |
| Are 24 usability participants enough?                                             | The purpose is iterative task diagnosis and fresh validation, not population estimation. Two rounds of 12 cover profile variation and make the 80% task gate auditable as at least 10 of 12 per critical task.                                                                                                                              |
| Are the action standards arbitrary?                                               | They are management thresholds, not empirical facts. Buyer/farmer/usability standards are proposed transparently and frozen before fieldwork; operating and economic standards must be derived from SMI capacity and risk tolerance.                                                                                                        |
| How do you prevent respondents from liking the idea because it sounds beneficial? | The design records initial response to the neutral concept, then discloses all material obligations, checks comprehension, and measures the change. It also requires an onboarding step or EOI rather than liking alone.                                                                                                                    |
| How do you know GAMMOT adoption is real?                                          | The future study separates intention from observed evidence-to-payment task performance and requires a fresh validation round. Sustained field use and payment integrity remain later-pilot outcomes.                                                                                                                                       |
| Is GAMMOT paying a salary?                                                        | The protocol uses milestone-based work compensation or task-based growership payment pending Philippine legal review. Payment mode alone does not settle employment status; the actual control and relationship must be assessed by counsel.                                                                                                |
| Why expand beyond Nestle?                                                         | Nestle remains the anchor reference pathway, but the research decision includes segmentation and targeting. Qualified institutional buyers are therefore co-primary, and at least one contingency or secondary pathway is required so the pilot is not designed around an untested single-buyer assumption.                                 |
| How will you test buyer willingness to pay with a small buyer universe?           | Use organization-level KILs, structured price/premium ladders, feasible service-package trade-offs, procurement constraints, and authorized next steps. Depth, role coverage, and documentary evidence matter more than converting the purposive sample into percentages.                                                                   |
| How do you address pole-vaulting or side-selling?                                 | The farmer survey uses non-accusatory competing-offer scenarios that vary price, payment speed, prior support, fairness, and certainty. The model should retain farmers through fair total value and reciprocal commitment, not mainly through punitive exclusivity.                                                                        |
| How do you prevent inherited assumptions from becoming evidence?                  | The paper uses a source ledger and claim-status labels. Each claim must trace to an approved project file, authorized record, primary or academic source, or future field evidence; otherwise it remains an assumption or is removed.                                                                                                       |
| Does Nestle require graded or selectively picked coffee?                          | The declared anchor practice is 'pick all,' not 'pick red.' The protocol asks only for actual buyer-required GCB conditioning and minimum acceptance checks; it does not impose a specialty-grade model.                                                                                                                                    |

| Likely question                         | Defensible response built into this design                                                                                                                                                                                  |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Does the program replace intercropping? | No. Intercropping may protect household food and income and can support agroforestry. The study tests whether prescribed milestones are compatible with beneficial diversification and household labor.                     |
| What if farmers and buyers disagree?    | Contradiction is retained in the joint display. The conjunctive rule prevents one side from compensating for failure on the other; revise or narrow may be appropriate.                                                     |
| What is genuinely innovative?           | The innovation is the coordinated farmer-to-buyer operating model and decision/data architecture, not the isolated use of NFC. The study tests whether integration creates incremental value relative to existing channels. |

## 17. Information still required from SMI/LT4A

**NO ADDITIONAL FILE IS REQUIRED TO USE THIS DRAFT** The approved project materials and current declarations are sufficient for v4.0. The items below are commissioning prerequisites. They do not block the course working paper, but SMI or its research partner must resolve them before fieldwork and before any full-term farmer or buyer package is shown.

### 17.1 Blocking decisions before fieldwork

1. Confirm the exact research catchments within Agusan del Norte and the Davao Region, recruitment partners, expected accessible farmer counts, and approved field language(s).
2. Approve or revise the proposed sample: farmer survey n=240; approximately 8-12 buyer organizations and 12-18 buyer/ecosystem KIs; four farmer FGDs plus eight IDs; GAMMOT 24 farmers in two rounds plus fresh validator, procurement, and payment roles.
3. Define the qualified-buyer universe, three to four candidate buyer archetypes, buyer access plan, feasible service packages, and the exact commercial-next-step evidence that will count.
4. Provide the executed Nestle anchor document or strongest available evidence and any alternative buyer records; confirm entities, product/specification, volume, duration, acceptance, delivery, value, rejection/remediation, payment, termination, and force-majeure terms.
5. Finalize counsel-approved farmer terms: eligibility; prescribed milestones; evidence; validation; value/frequency; payment timing; rejection; correction/appeal; deductions; monitoring/data; intercropping/labor compatibility; suspension; termination; exit; complaint; and non-retaliation.
6. Finalize the separate SMI GCB purchase terms and approved variants: buyer-acceptable GCB specification, volume, delivery, title/risk, price formula, deductions, rejection/remediation, payment, switching/side-selling, exit, and dispute rules.
7. Provide the current GAMMOT build, supported devices/connectivity, data-flow diagram, role-based access, error correction, audit trail, support process, and intended minimum critical tasks.

8. Define financing, pilot slots, maximum cash exposure, required contribution/return, downside ceiling, monthly funds for milestone compensation and GCB purchase, contingency, and responsible approving owners.
9. Keep the operational pilot outside the commissioned market-research study unless SMI formally changes the decision sequence; if later approved, define crop calendar, farms, milestones, duration, personnel, technology, measures, and safeguards.
10. Approve ethics, consent, recruitment, compensation, recording, data retention, withdrawal, incident response, and independent complaint arrangements.

## 17.2 Evidence and presentation inputs

1. Provide the underlying Nestle interview notes/transcript and permission restrictions on naming the organization or interviewee; reconcile any interview statement with authorized documents.
2. Provide the latest official sources for production, planted area, demand/imports, farmer count, regional share, farmgate price, and buyer requirements. Cite each direct official source rather than an intermediate internal summary.
3. Provide source and calculation files for every yield, premium, price, default, offtake, break-even, TAM, scale, and revenue assumption to be retained; otherwise remove the figure or classify it as a scenario input for testing.
4. Confirm whether Roots2Beans will include land leasing, corporate growership, farmer partnership, rehabilitation, new planting, or more than one model; respondents cannot evaluate an undefined bundle.
5. Provide the exact pilot roles and available capacity for onboarding, agronomy, evidence validation, payment approval, processing/conditioning, buyer-acceptance checks, aggregation, storage, delivery, GAMMOT support, appeals, and issue resolution.

## Appendix A. Exact approved unbranded concept

**USE** Reproduce the following wording exactly in the first concept exposure unless the team formally revises and pretests it. Formatting and translation must not change the substantive promise.

### UNBRANDED CONCEPT 1

Every harvest begins with hope. But hope alone does not build a successful coffee farm. Long before the first cherries are picked, a farmer must make one of the biggest decisions for the family's future—to invest years of hard work, patience, and commitment in a crop whose rewards will only come with time.

Too often, that journey begins alone. The right variety. The right planting plan. The right care. The right knowledge. The right support. Every decision made before the first harvest shapes everything that follows. That is why Company X was created. Not simply to buy coffee. But to begin where successful coffee farming truly begins. From quality planting materials and farm planning to responsible production support, modern agricultural technology, technical guidance, estate development, and market access, Company X partners with farming families through every stage of the coffee journey—long before the first harvest, and long after it.

Because great coffee is not made at harvest. It is built from the very first seedling. Together, let us grow a new generation of Filipino coffee farms—stronger, more productive, and capable of creating opportunities for generations to come. Some wait for the harvest.

#### **Company X begins with the first seedling.**

Available through: seedling starter packages, farm planning and estate development support, growership partnership programs, technical guidance packages, and post-harvest preparation assistance.

For: Filipino coffee farmers, farmer groups, cooperatives, and landowners who want to establish, improve, or expand coffee farms with stronger support from planting to future harvest.

**V4.0 INTERPRETATION RULE** The approved neutral concept is retained verbatim as the farmer's first exposure, but it does not define the final contract or the buyer-facing proposition. Counsel-approved full terms must clarify the upstream-to-midstream boundary, two payment streams, buyer-pathway specification, data/payment rules, competing-offer and exit conditions, and all material obligations. Buyers require a separate neutral integrator concept followed by feasible service packages. If pretesting exposes a material false inference, LT4A/SMI should formally revise and reapprove the stimulus before fieldwork.

## Appendix B. Sample-size calculations and interpretation

**Conventional simple-random benchmark:**  $n_0 = z^2 p(1-p) / e^2$ . At  $z=1.96$ ,  $p=.50$ , and  $e=.05$ ,  $n_0=384.16$ , rounded to 385.

This formula assumes a probability sample, independent observations, an effectively large population, and no design effect. A finite-population correction may reduce  $n$  only when the accessible population is known and sampling is genuinely random. Clustered or unequal sampling can increase requirements; nonresponse requires additional recruitment.

**Why  $n=240$  here:** the project is not attempting a national 95%/5% estimate. It requires eight quota cells with about 30 completed interviews each, directional profile comparisons, paired concept-to-terms measurement, and a modest adoption model. The result remains nonprobability, region-bounded evidence.

| Completed n               | Approx. per eight cells       | Interpretive consequence                                                                                 |
|---------------------------|-------------------------------|----------------------------------------------------------------------------------------------------------|
| 100                       | 12-13                         | Fragile subgroup percentages; frequent sparse cells; segmentation claim is weak.                         |
| 120                       | 15                            | Suitable for early canvass; still limited for multi-dimensional profile comparisons.                     |
| 240                       | 30                            | Stronger directional comparisons and modeling; still not nationally representative.                      |
| 385 probability benchmark | Not a quota-cell prescription | Supports about +/-5 points only under probability-sampling assumptions before design effect/nonresponse. |

## Appendix C. Construct and measurement map

| Construct/outcome        | Illustrative measurement                                                       | Interpretation caution                                      |
|--------------------------|--------------------------------------------------------------------------------|-------------------------------------------------------------|
| Concept comprehension    | Open recall plus scored teach-back of the core promise.                        | Recognition after explanation is not unaided understanding. |
| Full-terms comprehension | Scored teach-back of benefits, obligations, finance, delivery, data, and exit. | Willingness without comprehension is not informed adoption. |

| Construct/outcome           | Illustrative measurement                                                                                                                                | Interpretation caution                                                                          |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Income-smoothing value      | Seasonal cash-flow calendar plus usefulness of milestone amount/frequency relative to the pre-harvest income gap.                                       | Perceived relief is not evidence of actual income stability.                                    |
| Payment expectancy/fairness | Teach-back and multi-item clarity, predictability, verification, correction/appeal, trust, and fairness measures.                                       | High value cannot offset opaque rejection, delay, deduction, or control.                        |
| Livelihood compatibility    | Seasonal labor/food/intercrop calendar and perceived milestone conflict or complementarity.                                                             | Do not classify all intercropping as harmful or non-compliant.                                  |
| Burden/effort               | Expected time, complexity, record burden, and support need; observed task time in usability.                                                            | Expected effort and observed effort are distinct.                                               |
| Participation               | Post-disclosure top-two-box willingness, onboarding-step willingness, and EOI.                                                                          | EOI is not enrollment, compliance, or retention.                                                |
| Farmer retention resilience | Choice across competing-offer scenarios varying price, payment speed, prior support, fairness, certainty, and exit.                                     | Scenario choice is not observed side-selling; report the switching point and reasons.           |
| Buyer problem/value         | Current sourcing burden, requirement gaps, concept relevance, differentiation, proof required, and next-best alternative.                               | General local-sourcing interest is not specific Roots2Beans value.                              |
| Buyer commercial value      | Price/premium ladder, service-package trade-offs, non-price commitments, procurement constraints, and authorized next step.                             | Stated tolerance is not a binding purchase commitment.                                          |
| Buyer coverage              | Authorized document classification; covered specification/volume/period; acceptance, delivery, value, rejection, payment, and termination completeness. | Verbal assurance or an incomplete LOI is not guaranteed offtake.                                |
| GAMMOT readiness            | Task-level evidence-to-payment completion, assistance, time, error, comprehension, record confidence, and trust.                                        | A mean score cannot conceal failure of a critical approval, correction, appeal, or access task. |
| Operational feasibility     | Capacity, role separation, payment/appeal turnaround, record completeness, processing/conditioning, storage, and delivery readiness.                    | Requires SMI inputs and later field behavior.                                                   |
| Cash-flow viability         | Monthly peak exposure, committed funding, milestone/GCB payments, buyer collection lag, sensitivity/downside, and contingency.                          | Indicative before observed pilot payments, yield, GCB acceptance, and buyer collection.         |

## Appendix D. Reference list

### Core project sources

LT4A Marketing Research Team. (2026). LT4A - Concept Statement [PowerPoint].

LT4A Marketing Research Team. (2026, August 6). Roots2Beans Market Research Brief, Version 5.2 [PDF].

GMKTG261. (2026). Market Research Project Rubric [Course document].

GMKTG261. (2026). Developing Marketing Strategy Through Research: Course outline [Course document].

Rajagopal. (2018). Marketing Research: Fundamentals, Process, and Implications [Course reference].

GMKTG261. (2026). Match the Concept and the Product [Course reading].

GMKTG261. (2026). Sample of Full Mix Methodology [Course sample].

### Analogous methodological sources

- Anderson, J. C., Jain, D. C., & Chintagunta, P. K. (1993). Customer value assessment in business markets: A state-of-practice study. *Journal of Business-to-Business Marketing*, 1(1), 3-29. [DOI](#)
- Abetu, T. A., Ingenbleek, P. T. M., Giller, K. E., van der Lans, I. A., & Wolde-Meskel, E. (2024). Bundling of inputs and services for sustainable smallholder agriculture: The concepts, theoretical arguments and bundle designs using conjoint analysis. *International Journal of Agricultural Sustainability*, 22(1), 2322193. [DOI](#)
- Chazovachii, B., Mawere, C., & Chitongo, L. (2021). Sustainability of centralized contract farming among tobacco smallholder farmers in Makoni North District, Zimbabwe. *Cogent Social Sciences*, 7(1), 1921324. [DOI](#)
- Cimino, A., Coniglio, I. M., Corvello, V., Longo, F., Sagawa, J. K., & Solina, V. (2024). Exploring small farmers' behavioral intention to adopt digital platforms for sustainable and successful agricultural ecosystems. *Technological Forecasting and Social Change*, 204, 123436. [DOI](#)
- Tadesse, M. D., Gebresenbet, G., Ljungberg, D., & Tavasszy, L. (2024). Digital traceability capabilities: The case of the Ethiopian coffee supply chain. *Future Transportation*, 4(3), 780-794. [DOI](#)

### Primary industry sources for direct verification

- Philippine Council for Agriculture and Fisheries. Philippine Coffee Industry Roadmap 2021-2025. [Source link](#)
- Philippine Statistics Authority. Coffee: Major Non-Food and Industrial Crops statistics. [Source link](#)
- Philippine Statistics Authority. Technical notes on coffee production and farmgate-price harmonization. [Source link](#)
- Nestle Philippines. Regenerative agriculture in the NESCAFE Plan. [Source link](#)
- Nestle Philippines. 39% increase in local coffee buying. [Source link](#)

### v4.0 legal and comparator sources

- Supreme Court of the Philippines. (2020). G.R. No. 235315, 29 July 2020 (four-fold employment test and control test). [Source link](#)
- Equilibrium Intertrade Corporation. About Us. [Source link](#)
- Curve Coffee Collaborators. #ResponsibleCoffee: Building a sustainable Philippine coffee ecosystem together. [Source link](#)
- Curve Coffee Collaborators. Traceable coffee and its impact on your cafe business. [Source link](#)
- Luzon Coffee. About Us. [Source link](#)
- Coffee Heritage Project. About. [Source link](#)
- Pickup Coffee. Coffee Heritage Project partnership article. [Source link](#)