

# AgroTrack-Lite: Lean Canvas

## Problem

### Top 3 Problems:

1. **Market Access:** 800M smallholder farmers can't reach buyers directly
  - 70% post-harvest losses due to lack of buyers
  - Must sell to exploitative middlemen at 40-60% below market price
  - No visibility into market demand
2. **Trust Gap:** No mechanism to ensure fair payment
  - Farmers deliver but don't get paid (30% of transactions)
  - No written contracts or proof of agreement
  - Disputes take months, farmers always lose
3. **Technology Barrier:** 95% have feature phones, not smartphones
  - Can't use existing apps (WhatsApp, FarmDrive, Twiga)
  - No internet connectivity in rural areas
  - Illiteracy rates up to 40% in some regions

### Existing Alternatives:

- Physical middlemen (take 40% cut)
  - WhatsApp groups (require smartphone + internet)
  - Farmer cooperatives (slow, bureaucratic)
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## Customer Segments

### Early Adopters:

- Smallholder farmers (1-5 acres)
- Growing cash crops (maize, beans, coffee)
- Located within 50km of urban markets
- Age 25-50, basic literacy

- Already using mobile money (M-Pesa)

### **Target Geography:**

- Phase 1: Kenya (2.5M smallholder farmers)
- Phase 2: East Africa (20M farmers)
- Phase 3: Sub-Saharan Africa (175M farmers)

### **User Personas:**

#### **Mary (Primary)**

- 35, grows maize in Kisumu
- Has Nokia feature phone
- Uses M-Pesa for remittances
- Earns \$200/month, loses \$60 to middlemen
- Wants: Fair price, guaranteed payment

#### **Peter (Secondary - Buyer)**

- 45, owns restaurant in Nairobi
  - Wants: Direct farmer access, quality produce
  - Current pain: Unreliable middlemen, price volatility
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## **Unique Value Proposition**

**High-Level Concept:** "Uber for farm produce, but it works on SMS"

**Single, Clear Message:** "One text message. Instant marketplace. Automatic escrow. Zero middlemen."

### **Why Now?**

- Mobile money penetration: 85% in Kenya
- Feature phone ownership: 95%
- Blockchain escrow: Now affordable (\$0.001/tx)
- AI agents: Can coordinate complex marketplaces

### **3 Key Benefits:**

1. **+40% Income:** Eliminate middleman, get market price
  2. **100% Payment Guarantee:** Blockchain escrow releases automatically
  3. **Zero Barriers:** Works on any phone, no app, no internet
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## **Solution**

### **MVP Features (What We Built):**

#### **1. SMS Marketplace**

- Send: "Maize 200kg Kisumu"
- Receive: Instant price quote from AI

#### **2. Multi-Agent AI**

- Risk Agent: Scores farmer reliability
- Market Agent: Real-time price discovery
- Escrow Agent: Automatic payment custody

#### **3. Hedera Integration**

- HCS: Immutable transaction log
- HTS: Token-based escrow
- Mirror Node: Historical analytics

#### **4. Delivery Verification**

- OTP-based proof of delivery
- Automatic payment release
- Digital receipt generation

### **How It Works (30 seconds):**

Farmer → SMS "Maize 200kg Kisumu"

AI → Matches best buyer, checks risk

System → "Offer: 35 KES/kg. YES to accept"

Farmer → "YES [OTP]"

Blockchain → Locks escrow

Farmer → Delivers to hub

Clerk → Confirms with OTP

Blockchain → Releases payment to farmer

M-Pesa → Cash in farmer's phone

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## Channels

### Customer Acquisition:

#### Phase 1: Pilot (Months 1-3)

- Agricultural extension officers (government)
- Farmer cooperative partnerships
- In-person demo days at markets
- **Cost:** \$0 (relationship-based)

#### Phase 2: Growth (Months 4-12)

- Word-of-mouth referrals (incentivized)
- Radio ads in local language (Swahili)
- SMS campaigns to existing mobile money users
- **Cost:** \$10K

#### Phase 3: Scale (Year 2+)

- Partnership with NGOs (FAO, World Food Programme)
- Integration with agricultural input suppliers
- Government agricultural programs
- **Cost:** \$50K/year

### Distribution:

- Direct: SMS gateway (Safaricom, Airtel)

- Indirect: Through farmer cooperatives
  - Platform: API for agricultural apps
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## Revenue Streams

### Primary Revenue:

#### 1. Transaction Fee: 2%

- Applied to buyer payment
- Covers SMS, blockchain, and operations
- Example: 200kg maize @ 35 KES/kg = 7,000 KES
- Fee: 140 KES (\$1.00)

### Secondary Revenue: 2. Premium Services: \$5/month

- Price alerts
- Market trend reports
- Bulk buyer accounts
- Priority matching

#### 3. API Access: \$0.10/call

- Agricultural apps
- Input suppliers
- Insurance companies
- Credit scoring bureaus

#### 4. Data Insights (Anonymized): \$50K/year

- Market research firms
- Government agricultural departments
- NGOs and development agencies

### Revenue Projections:

Metric	Year 1	Year 2	Year 3
Farmers	10,000	100,000	500,000
Transactions/Year	120,000	1.2M	6M
Avg Transaction	\$50	\$50	\$50
Revenue @ 2%	\$120K	\$1.2M	\$6M
Premium Users	100	2,000	20,000
Premium Revenue	\$6K	\$120K	\$1.2M
<b>Total Revenue</b>	<b>\$126K</b>	<b>\$1.32M</b>	<b>\$7.2M</b>

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## Cost Structure

### Fixed Costs (Monthly):

- Cloud Infrastructure: \$500
- Hedera Fees: \$100
- Team Salaries: \$15,000 (3 people)
- Office/Operations: \$1,000
- **Total Fixed:** \$16,600/month = \$200K/year

### Variable Costs (Per Transaction):

- SMS: \$0.05 (2 messages per transaction)
- Hedera Fees: \$0.001
- M-Pesa Payout: \$0.10
- **Total Variable:** \$0.151 per transaction

### Year 1 Cost Structure:

- Fixed: \$200K
- Variable: \$18K (120K transactions)
- Marketing: \$10K
- **Total:** \$228K

### Break-Even:

- Need: \$228K revenue

- At 2% fee on \$50 avg: \$1 per transaction
- Break-even: 228,000 transactions
- **≈ 19,000 farmers doing 1 transaction/month**

#### **Funding Requirement:**

- Seed: \$250K (18 months runway)
  - Series A: \$2M (scale to 100K farmers)
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### **Key Metrics**

#### **Pirate Metrics (AARRR):**

##### **Acquisition:**

- Farmers onboarded/month
- Cost per acquisition: <\$5
- Target: 1,000/month by Month 6

##### **Activation:**

- % who complete first transaction
- Target: >60%
- Metric: First transaction within 7 days

##### **Retention:**

- Monthly active farmers
- Target: >70% monthly retention
- Metric: At least 1 transaction/month

##### **Revenue:**

- Avg revenue per farmer/month
- Target: \$1.20 (1.2 transactions × \$1 fee)
- Metric: ARPU (Average Revenue Per User)

##### **Referral:**

- Viral coefficient (k-factor)
- Target: >0.5 (1 farmer refers 0.5 new farmers)
- Metric: Referrals per active user

### Key Performance Indicators:

KPI	Month 3	Month 6	Month 12
Farmers	500	2,000	10,000
Transactions	1,500	12,000	120,000
Revenue	\$1,500	\$12,000	\$120,000
Retention	50%	65%	75%
NPS Score	40	60	70+

## Unfair Advantage

### What can't be easily copied?

#### 1. Multi-Agent Architecture on Hedera

- Novel: 5 autonomous agents coordinating via HCS
- Defensible: 6 months of R&D, working implementation
- Network effect: More transactions = better AI

#### 2. SMS + Blockchain UX

- First-mover: No wallet, no app, just SMS
- Defensible: Deep integration with local telcos
- Hard to replicate: Requires carrier relationships

#### 3. Agricultural Domain Expertise

- Team background in agritech
- Understanding of farmer behavior
- Trust built through cooperatives

#### 4. Hedera Cost Advantage

- \$0.001 per transaction (vs \$5+ on Ethereum)
- Enables micro-transactions



- Sustainable at scale

## 5. Early Mover in Kenya

- First to combine AI + blockchain + SMS for agriculture
- Building farmer network (network effects)
- Government/NGO partnerships forming

### Why Competitors Can't Easily Copy:

- Technical complexity: Multi-agent AI + blockchain
  - Distribution: Need farmer cooperative partnerships
  - Economics: Need ultra-low transaction fees
  - Trust: Farmers reluctant to try new platforms
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## Customer Acquisition Cost (CAC) & Lifetime Value (LTV)

### CAC Calculation:

- Organic (cooperative referral): \$2/farmer
- Paid (radio ads): \$8/farmer
- Blended CAC: \$5/farmer

### LTV Calculation:

- Avg transaction fee: \$1
- Transactions per month: 1.2
- Monthly revenue: \$1.20/farmer
- Avg lifespan: 24 months
- $LTV = \$1.20 \times 24 = \$28.80$

**LTV:CAC Ratio = 5.76:1**  (Target: >3:1)

### Payback Period:

- CAC: \$5
- Monthly revenue: \$1.20

- Payback =  $5 \div 1.20 = 4.2$  months  (Target: <12 months)
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## Risk Analysis

### Key Risks & Mitigation:

#### 1. Risk: Farmers don't trust technology

- Mitigation: Partner with respected cooperatives
- Start with small pilot, build social proof
- Money-back guarantee for first transaction

#### 2. Risk: SMS costs are too high

- Mitigation: Negotiate bulk rates with telcos
- Optimize to 2 SMS per transaction
- Pass through costs in transaction fee

#### 3. Risk: Hedera adoption by developers

- Mitigation: We're early, but that's opportunity
- Hedera growing 300% YoY
- Strong ecosystem support

#### 4. Risk: Regulatory challenges

- Mitigation: Working with agricultural authorities
- Blockchain as record-keeping, not finance
- Partner with licensed payment processors





#### 5. Risk: Competition from larger players

- Mitigation: Focus on underserved segment (feature phones)
  - Build network effects quickly
  - Deep integration with Hedera (not easily replicated)
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## Success Criteria (12 Months)

### Must Have:

-  10,000 farmers onboarded

-  120,000 transactions processed
-  70%+ retention rate
-  \$120K revenue
-  Partnership with 3+ cooperatives

#### **Nice to Have:**

-  Featured in agricultural publication
-  Government partnership secured
-  Expansion to second country
-  Seed funding raised (\$250K+)

**North Star Metric:** "Farmers earning 40% more than before AgroTrack"

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## **Team & Advisors**

#### **Core Team:**

- **You:** Technical Lead (Hedera + AI expertise)
- **[Need]:** Agricultural Specialist
- **[Need]:** Business Development (cooperative partnerships)

#### **Advisors:**

- Agricultural extension officers (validation)
- Blockchain developers (technical)
- NGO representatives (distribution)

#### **Hiring Plan (12 months):**

- Month 3: Operations Manager
  - Month 6: Marketing Lead
  - Month 9: 2 Customer Success Agents
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## **Weeks 1-2: Problem Validation**

- Interview 20 farmers
- Validate: Do they have this problem?
- Metric: >70% say "this is a major pain"

## **Weeks 3-4: Solution Validation**

- Demo SMS flow to 10 farmers
- Validate: Would they use this?
- Metric: >80% say "yes, I'd try it"

## **Months 1-3: Product-Market Fit**

- Pilot with 100 farmers
- Validate: Do they pay/transact repeatedly?
- Metric: >50% do 3+ transactions




## **Months 4-12: Scale Validation**

- Grow to 10,000 farmers
- Validate: Can we acquire profitably?
- Metric: LTV:CAC > 3:1



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## **Competitive Advantage Summary**

### **vs Traditional Middlemen:**




-  40% higher prices for farmers
-  Guaranteed payment (blockchain escrow)
-  Transparent pricing

### **vs Smartphone Apps (Twiga, FarmDrive):**




-  Works on feature phones (10x larger market)
-  No internet required

-  No app installation

#### **vs Farmer Cooperatives:**

-  Instant matching (vs weeks)
-  Individual agency (no bureaucracy)
-  24/7 operation

#### **vs Web2 Solutions:**

-  Trustless escrow (can't be manipulated)
-  Transparent audit trail
-  Survives local system failures

**Our Moat:** Multi-agent AI + Hedera + SMS + farmer network = hard to replicate

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