

Business Plan: AgriHarvest & CNS Logistics Integration

CNS Group: Transforming Tanzanian Agriculture with an Integrated, End-to-End Solution

1. Executive Summary

The CNS Group is pioneering a comprehensive, integrated service solution designed to revitalize and modernize Tanzania's vital agricultural sector. Recognizing that agriculture forms the backbone of the nation's economy, employing over 65% of the population, our model directly confronts the systemic challenges that impede growth and farmer prosperity.

Addressing the Post-Harvest Crisis

A significant obstacle to food security and farmer profitability in Tanzania is the staggering 20–40% post-harvest loss. This massive waste is primarily driven by two key factors: a widespread lack of access to appropriate mechanized harvesting equipment and the scarcity of professional, modern storage facilities. The CNS Group's solution is built to eliminate these vulnerabilities through a three-pronged, end-to-end service offering:

1. **Mechanized Harvesting (Harvesting-as-a-Service - Haas):** Leveraging the expertise of our partner, AgriHarvest, we deploy a "Harvesting-as-a-Service" (Haas) model. This service provides smallholder and SME farmers, who cannot afford to purchase high-cost machinery, with on-demand access to modern, efficient harvesting equipment and skilled operators. This drastically reduces spoilage during the critical harvest phase, ensuring a higher quantity and quality of yield is secured.
2. **Professional, Solar-Powered Warehousing:** Following the harvest, CNS Group offers secure, professional storage facilities. Crucially, these warehouses are solar-powered, ensuring a consistent, reliable, and environmentally sustainable cold-chain or protected environment. Proper storage is essential for preserving the

quality and extending the shelf-life of the produce, thereby allowing farmers to wait for optimal market prices and reducing market glut-related losses.

3. **Regional Road Freight and Logistics:** Building upon the established expertise of CNS Logistics, the third pillar of our service is efficient and reliable regional road freight. This ensures that the harvested and securely stored produce is transported swiftly and safely from the warehouse gate to the buyer or market. This seamless logistics integration minimizes transit time losses and further enhances the value chain.

Creating a Bankable Utility for Farmers

By integrating these three services—mechanization, storage, and transport—the CNS Group is providing more than just individual services; we are offering a "bankable" utility for smallholder and SME farmers. This means our reliable service framework provides a documented, traceable, and quality-controlled path for the farmer's output. This consistency and reduction in risk make the farmers' future harvests more predictable and attractive to financial institutions, unlocking access to credit and investment that was previously unavailable.

The CNS Group is committed to not only boosting farmer income but also contributing to greater national food security and building a more resilient, technology-enabled future for Tanzanian agriculture.

2. Market & Strategic Alignment

- **National Priority:** This initiative is in direct alignment with the Tanzanian Government's flagship agricultural strategy, the "Agenda 10/30," which sets an ambitious target for achieving a double-digit annual growth rate in the agricultural sector by 2030. This project contributes directly to the modernization and efficiency goals outlined in the Agenda.
- **The Problem: The Mechanization and Post-Harvest Efficiency Gap:** A critical bottleneck to achieving the 10/30 targets is the low level of agricultural mechanization and poor post-harvest management. Currently, only an

estimated 8% of Tanzanian farms utilize modern machinery for planting, cultivation, or harvesting. This reliance on manual or rudimentary methods severely limits productivity and scale. Furthermore, most smallholder farmers lack access to secure, modern storage facilities, leading to substantial post-harvest losses (estimated to be between 20-40% for key crops) due to pests, spoilage, and fluctuating market prices that force premature sales.

- **The Solution: Integrated Mechanization and Storage Hubs:** To address these interconnected challenges, the project proposes the deployment of a specialized, two-pronged solution focused on two of Tanzania's most productive agricultural regions: Morogoro (known for rice and maize) and Shinyanga (known for cotton and grains).
 - **Specialized Fleet Deployment:** This involves establishing a dedicated, high-efficiency fleet comprising heavy-duty haulage trucks for transporting inputs and produce, alongside a variety of modern agricultural tractors (equipped with appropriate implements like ploughs, planters, and harvesters) to be rented out on a pay-per-use basis to smallholder cooperatives.
 - **Licensed Warehouse Network:** Concurrently, the project will establish a network of licensed, climate-controlled warehouses in strategic rural locations within the Morogoro and Shinyanga clusters. These facilities will offer secure storage, quality grading, and access to warehouse receipt systems, enabling farmers to store their crops safely, obtain financing, and sell their produce at optimal market times, thereby stabilizing prices and significantly reducing post-harvest losses.

3. Operational Model

- **Mechanization (Haas):** 6 Combine Harvesters and 12 Tractors serving maize, rice, and wheat farmers at a competitive per-acre fee.
- **Storage (Waas):** Two 5,000-ton warehouses utilizing Solar-Powered Dryers to qualify for Green Financing.

- **Logistics:** A dedicated fleet of 4–30 trucks (CNS Logistics) ensuring secure and timely transit to markets or Dar es Salaam ports.
- **Tech Integration:** Partnership with AES Technologies India Pvt. Ltd. for real-time fleet tracking and a digital booking platform for farmer cooperatives (AMCOS).

Technology Integration & Operations Management

The partnership with AES Technologies India Pvt. Ltd. provides the technical foundation for a digital ecosystem that coordinates the movement of the fleet, the utilization of warehouses, and the engagement of smallholder farmers.

1. Core Technical Partnership

- **Strategic Collaboration:** The project leverages the expertise of AES Technologies India Pvt. Ltd. to develop and maintain the core digital infrastructure.
- **Logistics Management System (LMS):** This partnership facilitates the creation of a centralized command center to oversee fleet operations, driver performance, and real-time trip monitoring
- **Scalable Architecture:** The technology stack is designed to scale from the initial pilot to a nationwide network, supporting the planned expansion of the fleet from 4 to over 30 trucks

2. Key Operational Tools & Modules

- **Harvesting-as-a-Service (Haas) Booking:** A digital platform (accessible via USSD and WhatsApp) allowing farmers and cooperatives to book harvesting services based on crop maturity
- **Dynamic Route Optimization:** Algorithms developed with AES Technologies to minimize "empty runs" by coordinating harvest collection points with the nearest CNS Logistics transport hubs
- **Warehouse Inventory Tracking:** Real-time integration with the Warehouse Receipt System (WRS) to ensure that every ton stored in the solar-powered hubs

is digitally recorded and ready for trade on the Tanzania Mercantile Exchange (TMX)

3. Real-Time Logistics & Monitoring

- **Fleet Telematics:** Continuous monitoring of vehicle health, fuel consumption, and cargo security for both the harvesting fleet and the heavy-duty logistics trucks
- **Performance Analytics:** Data-driven reporting on harvester utilization per acre, enabling management to optimize pricing and service delivery in high-demand regions like Kilombero and Shinyanga

Technology Implementation Roadmap

Phase	Milestone	Focus
Setup	Digital Platform Blueprint	Designing the USSD/App interface for farmer bookings with AES Technologies.
Integration	Fleet Connectivity	Equipping all tractors, harvesters, and trucks with GPS and monitoring hardware.
Rollout	WRS Sync	Ensuring warehouse data flows seamlessly to regulatory bodies (WRRB) and banks.

Optimization	Data Analytics	Using operational data to refine route planning and reduce transport costs by 20%.
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By embedding AES Technologies as a technical partner, the project transforms from a traditional logistics company into a tech-enabled service utility, making it highly attractive to investors looking for modern, transparent, and scalable business models in the African agricultural sector.

4. Financial Projections

Metric (TZS)	Year 1 (2026)	Year 5 (2030)
Total Revenue	700.8 Million	1.52 Billion
Total CAPEX	11.98 Billion	2.57 Billion
Fleet Size	22 Units	50 Units

Funding Requirement: TZS 18–22 Billion (approx. USD 7–9 Million).

Proposed Structure: 70% Debt (Targeting TADB/Commercial Bank Green Windows) and 30% Equity.

5. ESG & Impact (SDG Alignment)

- SDG 2 (Zero Hunger): Directly reducing food waste through better harvesting and storage.
- SDG 8 (Decent Work): Creating technical jobs for local youth and women in rural regions.
- Environmental: Reducing carbon footprint via renewable solar energy in warehouse operations.

The integrated project between AgriHarvest Tanzania Ltd. and CNS Logistics is strategically designed to contribute to several UN Sustainable Development Goals (SDGs), directly supporting Tanzania’s national development agenda for 2030. By addressing critical gaps in mechanization, post-harvest infrastructure, and professional logistics, the project creates a multi-dimensional impact on rural prosperity and environmental sustainability.

Core Alignment with UN Sustainable Development Goals

SDG Goal	Project Contribution & Impact
SDG 1: No Poverty	By reducing post-harvest losses and providing access to markets, the project is projected to increase smallholder farmer incomes by 15–30%. Increased productivity and income help move rural households out of subsistence cycles.

<p>SDG 2: Zero Hunger</p>	<p>The project directly tackles food insecurity by minimizing the 20–40% post-harvest loss currently prevalent in Tanzania through efficient mechanized harvesting and professional storage.</p>
<p>SDG 5: Gender Equality</p>	<p>Implementation plans include preferential training and hiring programs for women and youth as harvester operators and warehouse managers, fostering inclusive economic participation.</p>
<p>SDG 7: Affordable & Clean Energy</p>	<p>The use of industrial solar-powered warehouses and drying systems reduces reliance on fossil fuels and the national grid, qualifying the project for green finance initiatives.</p>
<p>SDG 8: Decent Work & Economic Growth</p>	<p>Beyond direct employment for technical and logistics staff, the project supports economic growth by transitioning small-scale farming into a more competitive and bankable sector through the Warehouse Receipt System (WRS).</p>
<p>SDG 12: Responsible Consumption & Production</p>	<p>Professionalized storage and efficient transport through CNS Logistics ensure that more food reaches consumers with less waste, promoting a sustainable and efficient domestic supply chain.</p>

<p>SDG 17: Partnerships for the Goals</p>	<p>The project is a model for private-sector collaboration, integrating specialized logistics (CNS) with agricultural tech (AgriHarvest) while partnering with local AMCOS (cooperatives) and regulatory bodies like WRRB.</p>
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Strategic Impact Highlights

- **Financial Inclusion:** Through the Warehouse Receipt System (WRS), farmers can use their stored produce as collateral for formal bank loans, bridging the gap between farming and formal finance.
- **Climate Resilience:** Multi-zone fleet deployment and solar-powered infrastructure provide a buffer against localized weather risks and high energy costs, making the project's impact sustainable over the long term.
- **National Alignment:** The project aligns with Tanzania's "Agenda 10/30" and the Third National Five-Year Development Plan (FYDP III), which prioritize agricultural mechanization and industrialization for human development.

Local Content

A critical component of a bankable business plan in Tanzania is a robust Local Content and Community Impact strategy. This ensures the project not only complies with Tanzanian law but also secures its "Social License to Operate."

1. Local Ownership and Competitive Advantage

- **Tender Eligibility:** The company maintains a high percentage of local Tanzanian

ownership. This status is a strategic lever that allows the business to participate in restricted government tender offerings countrywide.

- **TISEZA Registration:** By registering with the TISEZA, the project formally commits to contributing to Tanzania's broader economic development through the logistics and agricultural sectors.

2. Employment and Human Capital Development

- **Local Hiring Priority:** The personnel plan focuses on hiring key employees who are deeply familiar with the Tanzanian transport and agricultural landscape.
- **Capacity Building:** The "Manpower" division of the group is dedicated to:
 - **Training & Capacity Building:** Professional development programs for harvester operators, warehouse managers, and drivers.
 - **Technical Training:** Upskilling local staff in the maintenance of specialized machinery like combine harvesters and solar-powered drying systems.
- **Youth and Gender Inclusion:** The project actively implements preferential training and hiring programs for women and youth, particularly through cooperative-based recruitment.

3. Smallholder Impact & Supply Chain Development

The project's business model is fundamentally built on local value creation:

- **Farmer Income Growth:** By providing mechanized harvesting and professional storage, the project is designed to increase smallholder farmer incomes by 15–30% through the reduction of post-harvest losses.
- **Financial Inclusion:** Through the Warehouse Receipt System (WRS), local farmers gain access to formal credit by using their stored produce as collateral.
- **Cooperative Support:** Strategic partnerships are formed with Primary Cooperative Societies (AMCOS) to ensure that the benefits of mechanization reach even the most remote farming clusters.

4. Community Engagement & Social Responsibility

- **Regional Development:** Beyond Dar es Salaam, the project decentralizes economic activity by establishing operational hubs in regions like Morogoro (Kilombero) and Shinyanga.
- **Market Integration:** Marketing efforts are focused on local platforms such as the Nanenane Agricultural Fairs, ensuring the brand is embedded in the Tanzanian farming community.
- **Sustainable Infrastructure:** The use of solar-powered warehouses reduces the strain on the national grid and introduces sustainable technology to rural agricultural clusters.

Local Content Pillar	Strategic Action	Goal
Ownership	High percentage local ownership	Eligibility for government tenders
Employment	Focus on local technical hires	Local skills transfer and job creation
Sourcing	AMCOS-led aggregation	Stronger rural supply chains
Training	Operator and management upskilling	Development of a specialized ag-tech workforce

6. Implementation Roadmap

The implementation plan for the integrated is structured across four critical phases over an 18-month roadmap. This plan is designed to move from foundational setup and compliance to a full-scale regional rollout.

Phase 1: Foundation & Resource Mobilization (Months 0–3)

This initial phase focuses on securing the necessary capital and regulatory groundwork to begin operations.

- Capital Acquisition: Secure TZS 18–22 billion (USD 7–9M) in blended financing, prioritizing TADB and sustainable/Islamic banking windows.
- Regulatory Compliance: Finalize TIC registration to access duty drawbacks and VAT deferments.
- Strategic Partnerships: Execute Memorandums of Understanding (MoUs) with AMCOS (cooperatives) in Morogoro and Shinyanga to guarantee service demand.
- Site Selection: Secure land for two solar-powered warehousing hubs in high-yield clusters.

Phase 2: Infrastructure & Fleet Deployment (Months 4–9)

During this stage, the project transitions into physical setup and asset procurement.

- Asset Procurement: Order the initial fleet of 6 combine harvesters, 12 tractors, and 4 heavy-duty trucks (Howo/Scania).
- Construction: Build the two 5,000-ton warehouses, including the installation of industrial solar arrays and efficient crop dryers.
- Digital Integration: Launch the digital booking and dispatch platform to coordinate harvesting and transport services.
- Staffing: Hire and train operators, warehouse managers, and logistics coordinators, focusing on local talent and youth inclusion.

Phase 3: Pilot Operations & Market Entry (Months 10–12)

This phase marks the commencement of revenue-generating services in primary target zones.

- Service Launch: Begin Harvesting-as-a-Service (HaaS) in the Morogoro (Kilombero) rice valley and Shinyanga maize regions.
- Storage Activation: Open warehouses for Warehousing-as-a-Service (WaaS) and begin issuing electronic Warehouse Receipts (eWRS).
- Logistics Sync: Activate CNS Logistics for the movement of stored goods from hubs to Dar es Salaam or regional markets.

Phase 4: Optimization & Scaling (Months 13–18)

Following the pilot, the business will optimize its operational model and plan for geographic expansion.

- Efficiency Audit: Review harvester utilization rates and warehouse throughput to optimize route planning and pricing.
- Market Expansion: Evaluate potential for satellite storage sheds in the Southern Highlands.
- Technology Scaling: Introduce advanced fleet tracking and automated trip reporting systems to enhance operational transparency.

Summary Roadmap

Timeline	Key Milestones
Q1 (0-3m)	Bank approvals, TISEZA registration, AMCOS MoUs.
Q2-Q3 (4-9m)	Fleet procurement, warehouse construction, staff training.
Q4 (10-12m)	Launch pilot harvests in Morogoro and Shinyanga.
Q5-Q6 (13-18m)	Fleet expansion, entry into Southern Highlands, tech optimization.