

Standard Operating Practices for Cassava Outgrower Engagement for Stem Multiplication and Root Production.



**Lessons from the Building an Economically
Sustainable and Integrated Cassava Seed System
(BASICS-II) Project.**

March 2024.

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Overview

Building an Economically Sustainable and Integrated Cassava Seed System, Phase 2 (BASICS-II), led by the International Institute of Tropical Agriculture (IITA), aims to develop an economically sustainable and integrated cassava seed system characterized by the commercial production and sale of cassava planting materials. The project addresses the challenge of access to quality-improved planting materials by developing and promoting innovative commercial seed provision and dissemination models.

The goal of BASICS-II is to provide farmers with access to affordable, quality-assured seeds of the cassava varieties in demand by local food and processor markets through the establishment of a commercially viable seed value chain to ensure efficient production, dissemination and adoption of new varieties for productivity improvement and income generation.

Sahel Consulting leads the implementation of Component 4 of the project – the Processor-Led Model (PLM) component focused on developing a processor-associated seed system. The goal of the PLM is to demonstrate that processors can produce seeds for their farms and outgrowers in an economically sustainable and replicable manner. To this end, Sahel Consulting developed functional outgrower engagement models for cassava stem multiplication and root production across the sites of processor partners.

In BASICS-II, an outgrower engagement model is a contractual partnership between a cassava processor and farmers (individually or collectively). The processor typically provides inputs like certified cassava seeds of processor-preferred varieties, herbicides, or fertilizers. In return, the farmers agree to cultivate cassava using the processor's recommended agronomic practices to ensure consistent cassava root and stem quality. Upon harvest, the farmers sell their cassava roots back to the processor at a predetermined price, guaranteeing a steady supply for processing. Depending on the specific agreement, the processor may offer additional support such as training, transportation, or extension services to benefit the farmers further. Ultimately, this model fosters a mutually beneficial collaboration that secures a reliable supply of cassava roots for the processor while potentially improving the livelihoods of the outgrowers. Additionally, this model improves smallholder farmers' access to markets, finance, and infrastructure and improves agronomic practices while enhancing processors' access to land, labour, and a constant supply of cassava roots.

Following the support for the engagement of outgrowers and the management of the outgrower scheme across processor sites, Sahel Consulting gained valuable insights into developing and managing an outgrower scheme for cassava root production and stem multiplication. Consequently, the team has highlighted the following Standard Operating Practices (SOP) for a successful and scalable outgrower engagement scheme for cassava production in Nigeria.

This Standard Operating Practices (SOP) outlines the framework for a successful and economically sustainable outgrower engagement scheme for cassava production.

Pre-Planting Activities

Selection of Willing and Capable Farmers

Farmers residing within the host or neighbouring communities of processors are identified through targeted outreach efforts such as demand creation trials or demonstration plots. These efforts are crucial to generating interest and raising awareness among potential outgrowers. Following identification, a selection process based on predefined criteria takes place to ensure suitability for the outgrower program. These criteria may include:

1. Prior experience in cassava cultivation.
2. Willingness to learn and adopt new agronomic practices.
3. Access to land and proximity to the processor's factory.
4. Access to funding.
5. Willingness to sell cassava roots to the processor.
6. Willingness to provide labour throughout the cultivation period.

While engaging individual farmers is possible, prioritizing existing farmer groups or facilitating the formation of new clusters based on shared interests and proximity is often preferred. This fosters collaboration, knowledge sharing, and efficient resource allocation.

Given the financial investment in an outgrower scheme, selecting the right farmers for engagement is critical for its success. Although processors, non-governmental organizations (NGOs), and government initiatives may provide financial investments, farmers are expected to invest significantly in the scheme.

Adopting a Suitable Outgrower Engagement Model

An outgrower engagement model is an organizational framework designed to meet essential raw material needs by sharing economic risks/rewards for mutual benefit. Outgrower models are driven by stakeholder interests in achieving a shared objective—reducing production constraints and market uncertainty while maximizing return on investments.

In Nigeria, the smallholder farmers who cultivate the bulk of cassava face various production constraints. These constraints include a high cost of land preparation and farm inputs, limited access to farm credits, inadequate modern farming tools, poor market linkage, and weak extension support. Considering these constraints is critical to adopting a suitable outgrower engagement model for Nigeria's cassava stem multiplication and root production.

To ensure the adoption of suitable outgrower engagement models, the preferences of both cassava processors and engaged outgrowers must be aligned. This alignment should consider the prevailing local economic realities and existing engagement models. By drawing upon and combining elements of these established models, tailored hybrid approaches can be created that effectively address the specific needs and preferences of processors and outgrowers.

The following tables show the common farmer engagement models (Table 1) and the hybridized outgrower engagement models adopted by processors participating in the BASICS-II project (Table 2).

Table 1. Common Farmer Engagement Models for Cassava Production.

Farmer Engagement Models	Key Characteristics
Informal	- Processors source roots directly from individual farmers. - No input/technical support is required from processors. - High risk of supply failure due to processors' limited control over varieties and qualities of cassava roots. - No farmer grouping and management are required; contracts or MoUs are not required.
Intermediary	- Involves contract (loose, often verbal) transactions through intermediaries, e.g., buying agents and aggregators. - Processors set root specifications in advance. - Minimal processor involvement in input and technical support. - High risk of side-selling.
Multipartite	- Often operated via contracts/MoUs with partners and farmer groups. - Limited investment by processors due to partner responsibility-sharing (land preparation, input, and technical support). - Close monitoring of operations due to high level of root specifications. - There is a low risk of side-selling due to the multipartite monitoring of operations.
Centralized	- The processor's location is central to the outgrowers' fields. - Involves contracts/MoUs between processors and individual farmers/farmer groups. - Often involves providing technical/input support and tillage services to farmers. - High level of root specification by the processor. - Curtails side-selling risks due to a high degree of supervision by processors.
Nucleus-Estate	- Processors own or often control land used by farmers. - The farmers provide labor throughout the cultivation period. - Supply arrangements are based on contracts with farmer groups. - Flexibility in pricing to reflect prevailing economic realities. - Rigorous product specification. - Lowest risk of side-selling.

Table 2. Hybridized Outgrower Engagement Models Adopted by Processors Participating in the BASICS-II Project.

Adopted Outgrower Engagement Models	Key Characteristics
Centralized – Multipartite	• Outgrowers provide land for cultivation. • The processor's location is central to the outgrowers' fields. • Involved in a tripartite agreement between the processor, farmer groups, and a third party. • Limited investment by processors and outgrowers due to responsibility-sharing between partners. • There is a low risk of side-selling due to frequent supervision and monitoring of farmers' operations by processors and third parties.
Nucleus-Estate – Multipartite	• The processor provides its land to the engaged outgrowers. • Involves a tripartite agreement between the processor, farmer groups, and third parties. • Limited investment by processors and outgrowers due to responsibility-sharing between partners. • Lowest risk of side-selling due to the location of the fields (right on the processor's land) and constant monitoring of farmers' operations by processors and third parties.

Adopting a suitable outgrower engagement model is critical in a successful and scalable outgrower scheme.

Share of Value Among Parties

Following the adoption of a suitable engagement model, it is critical for processors and outgrowers to agree on the share of value from the harvested roots and stems. Upon harvest, the processor is expected to off-take 100% of the roots from the outgrowers. However, both parties should determine and agree upon a suitable ratio for sharing the harvested stems (this is applicable if the stems are not provided on a cash or credit basis to the outgrowers).

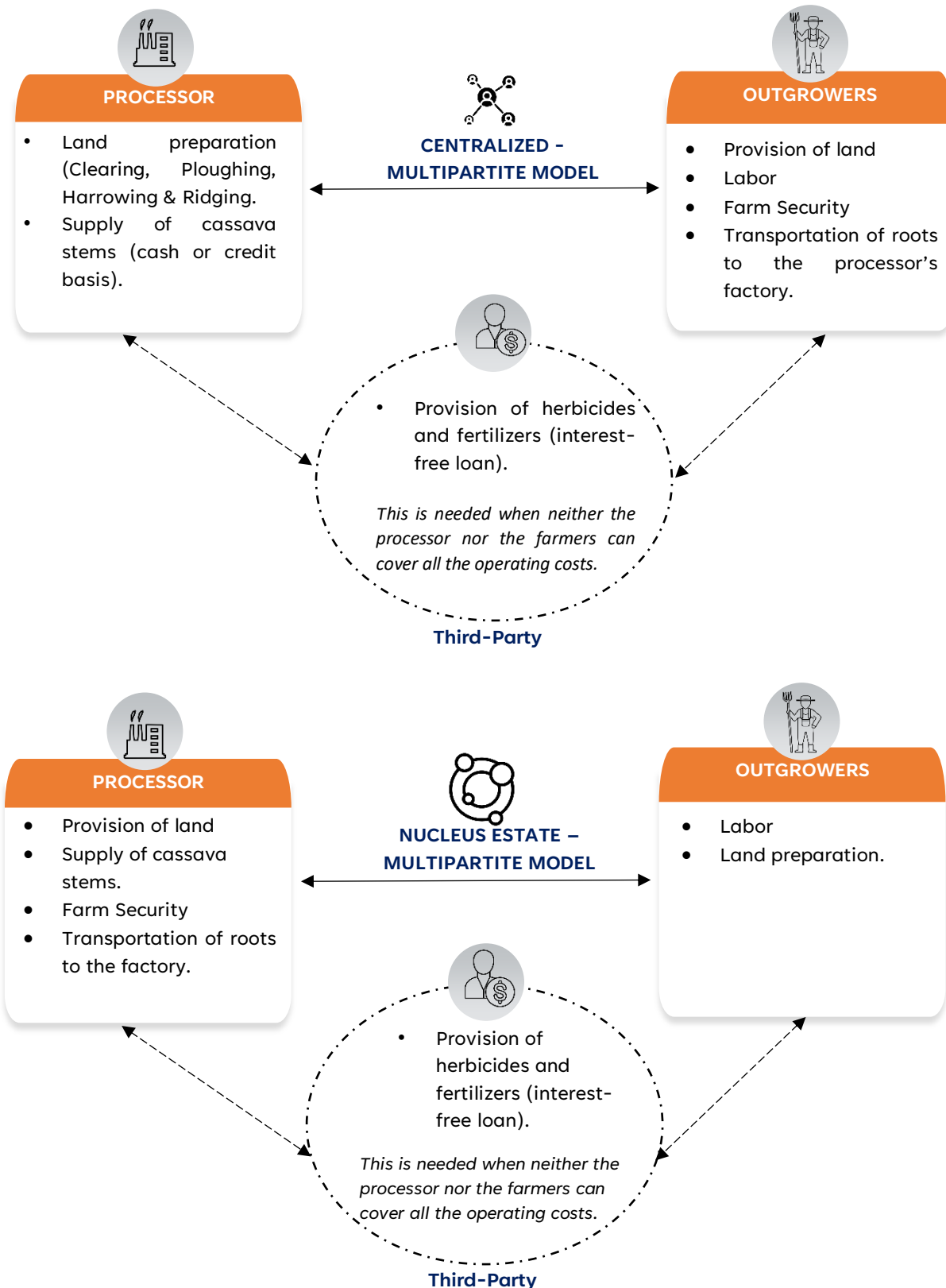
Responsibility-sharing Between Parties

Given the financial investment required for a scalable/sustainable outgrower scheme, the investment must be shared between the parties (processors, outgrowers, and third parties—financial institutions and other organizations). The processor facilitates and manages the relationship with third parties, not the farmer.

Processors are expected to supply cassava stems to the outgrowers on a cash or credit basis and provide technical support to the outgrowers. In contrast, the outgrowers cover the labor cost throughout the cultivation period.

In addition to labour costs, outgrowers provide land and farm security under the Centralized-Multipartite Model, while processors provide land and farm security under the Nucleus-Estate-Multipartite Model.

Figure 1. Responsibility-sharing Per Hectare across the Hybridized Models Adopted by Processors.



Determination of Off-take Price

The basis for pricing is determined between the parties involved in the outgrower scheme. The prevailing market price for cassava roots and the total cost of production (considering the amount of investment by the parties involved) are factors to consider when determining the off-take price. The price should be flexible, with the possibility of an upward or downward review depending on the prevailing market price of cassava roots.

Development and Endorsement of Memorandum of Understanding (MoU)

A Memorandum of Understanding (MoU) aims to establish a business relationship between the parties for the success and sustainability of the outgrower scheme within a processor's framework. The MoU (see appendix) defines the outgrower engagement model being adopted, the parties involved and their obligations, the responsibility-sharing formula, the model for determining the off-take price, the tenure of the engagement, dispute management, terms for terminating the outgrower scheme, the penalty for default, and the signatories of each party.

Upon agreement to the terms, the MoU is endorsed by the signatories of the parties involved in the scheme. In cases where a processor intends to engage a few farmers (less than 15), the MoU may be endorsed by individual farmers; however, engaging a farmer group is advisable for a scalable and sustainable outgrower scheme.

Land Preparation

Following the endorsement of the MoU by the parties involved in the scheme, land preparation should commence in earnest. The parties involved must accurately measure the field before clearing, ploughing, harrowing, and ridging.

Purchase and Supply of Cassava Stems to Outgrowers

Given that the off-taken cassava roots would be processed into various product lines with specific quality requirements, processors need to have control over the varieties planted by the outgrowers. A way of doing this is to supply (on a cash or credit basis) cassava stems of desired varieties to the outgrowers for cultivation.

A processor may source stems of the desired cassava varieties from its in-house multiplication field or make direct purchases from Early Generation Seed entities such as IITA GoSeed and Umudike Seeds.

Planting Operations

Planting

The outgrowers will commence planting upon the completion of land preparation, and the processor's supply of cassava stems. The stems may be treated with effective anti-fungal and insecticidal agents to prevent fungal diseases and insect infestation.

During planting, it is essential to adopt the staggered planting technique, spacing out planting by weeks so that harvesting and processing can be carried out at intervals. This is an important consideration given the risk of Post-harvest Physiological Degradation (PPD) of cassava roots.

Post-planting Activities

Capacity Development

Following the pre-planting and planting operations, it is critical to conduct capacity-building training to provide the outgrowers with the requisite knowledge on a successful and sustainable outgrower engagement, emphasizing the best practices in cassava root and stem production, the economics of cassava stem and root production, and financial management. Also, the training will provide a platform for the outgrowers to understand the importance of building and maintaining a positive relationship with processors.

Farm Insurance Policy

Farm insurance policies are insurance packages that mitigate farmers' financial losses due to crop failure caused by various damages caused by weather fluctuations, such as floods, inadequate or excessive rainfall, plant diseases, pest infestations, fire outbreaks, and explosions.

Monitoring and Evaluation

Monitoring the performance of the outgrowers is critical to the scheme's success. It informs the extent of technical support required by the outgrowers. The parties involved should agree upon and adopt a model for tracking the outgrowers' performance. The processor and outgrowers may assign individuals to lead this activity. The following are critical considerations for the monitoring exercise.

- Time of planting.
- Crop emergence/survival rate.
- Spacing (plant density).
- Timely weeding and adherence to Good Agronomic Practices (GAP).
- Establishment of fire breaks/guards.
- Implementation of pest and disease control practices.
- Crop establishment/crop status at various intervals throughout the season.
- Timely harvesting and harvesting technique.

Communication

Frequent communication through regular meetings (monthly or bi-weekly) between the processor and the outgrowers is critical to the success of any outgrower scheme. It fosters a good working relationship between the processors and the outgrowers and provides a platform for conflict resolution and the alignment and realignment of the shared objectives. The mode and frequency of communication should be determined by the parties involved in the scheme.

Harvest and Supply of Roots to Processors' Factory

Following the adoption of the staggered planting technique by spreading out planting across weeks, harvesting and supplying roots to the processor's factory should be at intervals to enable the processor to process the roots and minimize the risk of Post-harvest Physiological Deterioration of cassava roots.

Payment to Outgrowers and Loan Recovery

Upon off-take of cassava roots, the processor is expected to pay the agreed price per ton to the outgrowers. It is important to note that financial support, such as loan facilities provided by third parties to support the outgrower scheme, must be deducted from the proceeds of the off-taken roots by the processor before payment is made to the outgrowers. This clause must be included in the MoU and agreed upon by the parties involved before endorsement.

Mechanisms for Evaluating the Performance of the Outgrower Scheme

The following are critical considerations for measuring the success of the scheme.

- Adherence to the Memorandum of Understanding (MoU): This evaluates each party's adherence to its obligations as endorsed in the MoU.
- Average yield from outgrowers' fields: It indicates the total productivity of the outgrowers.
- Timely harvest and supply of cassava roots to the processor's factory: This enables the processor to process the roots and minimize risks of Post-harvest Physiological Deterioration (PPD) of cassava roots.
- Quality of supplied roots (high dry matter/starch content): This is directly related to the quality and quantity of finished products from the processor's factory.
- Payment to outgrowers: The primary benefit of the scheme for the outgrowers is creating an assured market for the cassava roots.
- Percentage increase in production in the processor's factory: This measures the percentage increase in output in the processor's factory due to the off-taken roots from the outgrower scheme.

Incorporating Feedback and Lessons Learned into Continuous Improvement of the Scheme

It is essential to hold periodic review meetings to discuss challenges encountered in the scheme. During these meetings, the parties involved may agree on solutions for continuous improvement of the scheme. The review meetings could be a platform for knowledge sharing between the processor and the outgrowers.

References

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Appendix

MEMORANDUM OF UNDERSTANDING

BETWEEN

A CASSAVA PROCESSOR

AND

OUTGROWERS

AND

A THIRD PARTY

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Article 1. Description of Services

1.1 Purpose

This Memorandum of Understanding (MoU) aims to establish a business relationship between the three parties to ensure the success and sustainability of the outgrower scheme within the Processor's framework.

Article 2. General Conditions for the Agreement

Basis for Proposed Agreement

2. The third Party's obligations under the agreement are:

- a. **Provision of Loan Facility:** The third party will provide an interest-free loan of **NGN XXX** for the purchase of herbicides and fertilizers for 20 outgrowers on 40 ha. The amount will be paid to a vendor supplying the herbicides and fertilizers to the processor for allocation to the outgrowers.
- b. **Provision of technical support:** In collaboration with the processor, the third party will provide technical support where and when necessary to the outgrowers to ensure that proper agronomical processes are followed.
- c. **Field Visit:** The third party has an unreserved right to visit the farm anytime. However, the third party will provide at least 72 hours ' notice to the outgrowers through the processor to gain access to the farm. All findings during the visit will be communicated to the outgrowers appropriately.

3. Processor's obligations under the agreement are:

- a. **Land Preparation for the Outgrowers:** The processor will cover the cost of land preparation for the outgrowers. The cost incurred will be deducted upon the processor's offtake of roots. This arrangement is based on a separate agreement between the processor and the outgrowers.
- b. **Provision of Cassava Stems:** The processor shall provide the outgrowers with cassava stems of desired varieties for cultivation.
- c. **Invoice for Herbicide and Fertilizer Purchase:** The processors will facilitate an invoice of **NGN XXX** for herbicide and fertilizer purchase for 40 hectares from a vendor and share it with the third party.
- d. **Allocation of Herbicides and Fertilizers to the Outgrowers:** The processor will receive and coordinate the allocation of herbicides and fertilizers to the outgrowers at every stage of the cultivation season. The processor will also facilitate the loan repayment to the third party from the proceeds of the off-taken cassava roots.
- e. **Provision of Technical Support:** The processor will provide technical support to the outgrowers where and when necessary to ensure adherence to proper agronomical practices.

- f. **Farm Visit:** The processor has an unreserved right to visit the farm anytime. However, the processor will endeavour to provide at least 24-hour notice to the outgrowers before visiting the farm. All findings during the visit will be communicated to the outgrowers appropriately.
- g. **Offtake of Cassava Roots from the Outgrowers:** The processor will purchase cassava from the outgrowers 12 months from the planting date, and the harvesting plan will be jointly agreed upon by three parties based on the recommended quality criteria of the roots.

The processor shall specify the minimum quality criteria that cassava roots must meet before being purchased from the outgrowers (refer to the table below). This will be reviewed and updated at the beginning of each farming season.

Cassava Root Quality Requirements (Factory Requirement)
• Roots must be fresh. • Harvesting and supply shall be made within 24 - 48 hours. • Roots must be white. • Roots must not be fortified with any vitamins. • Roots must be free of banned pesticides or other chemical/ contaminant. • Roots must have minimum Starch Content acceptable to Cemuoa.

The processor will have the right of first refusal to the harvested cassava roots cultivated by the outgrowers. Notwithstanding the above, there may be situations where it is not economically viable to offtake the cassava roots. The situations may include:

- If or when the harvested cassava roots do not meet the required quality criteria.
- The processor cannot purchase cassava roots due to force majeure or any other reason, including, but not limited to, a factory shutdown, acts of God, hostilities, rebellion, military or usurped power, civil war, riots, strikes, terrorism, etc.
- After reviewing the harvest plan and the factory's production schedule (including shutting down production), it was jointly decided that harvesting the cassava was not advisable.
- Any reasons that will be communicated and jointly discussed with the outgrowers.

In such instances, the processor may authorize the outgrowers in writing to sell the harvested cassava roots to other off-takers. No cassava may be sold to a third party without the processor's written authorisation. Side selling will attract penalties, including compensation payment, suspension, and termination of this agreement.

- h. **Pricing:** The prevailing market price and the agreed price for the offtake of roots will be the basis for pricing.

Outgrowers shall deliver fresh roots of cassava harvested no later than 24 hours to the processor and sell at an agreed price of XXX with an XXX% upward or downward review of the price should there be an increase in the market price of cassava roots during harvest at the factory gate.

i. Facilitation of loan repayment to the Third Party:

Upon offtake of the cassava roots from the outgrowers, the processor shall facilitate the repayment of the loan in full to the third party. The loan shall be repaid ten working days after the offtake of roots from the outgrowers. This will occur when the cassava has matured (at most 12 months after planting).

4. Outgrowers' obligations under the agreement are:

- a. **Cultivation of Recommended Variety:** The outgrowers shall cultivate only recommended cassava varieties by the processor for root production and stem multiplication.
 - b. **Cultivation Plan:** The outgrowers and the processor shall jointly agree on a farming plan that includes the time of land preparation, planting, and harvest.
 - c. **Labor and Field Management:** The outgrowers will be solely responsible for their respective cassava fields' labor and field management. The processor and the third party will only provide technical support.
 - d. **Sale of Cassava Roots:** Except otherwise approved in writing by the processor, the outgrowers shall sell cassava roots of specified quality criteria exclusively to the processor at the agreed/determined price.
 - e. **Loan Repayment:** Outgrowers shall repay the loan in full to the third party through the processor no later than ten working days after the supply and receipt of the cassava roots at the processor factory.
- 5. Dispute management:** If there is any dispute about any issue in the agreement, both parties shall resolve the issue amicably in the presence of an external mediator.
- 6. Model of outgrower engagement:** Under this engagement, the processor shall take 100% of the roots from the outgrowers, while a sharing formula of 80% and 20% for the processor and the outgrowers, respectively, shall be adopted for the harvested stems.
- 7. Tenure of the agreement:** This agreement tenure shall be for an initial period of one farming season.
- 8. Other terms of the proposed agreement are as follows:**

- **Land acquisition:** The outgrowers are solely responsible for land acquisition.

- **Security:** The security of the farm shall be the sole responsibility of the outgrowers.

- **Termination of contract:** Either party reserves the right to terminate the contract if the other party breaches any of the express terms of the agreement, including but not limited to cultivating any crop other than cassava, using chemicals or agronomic practices deemed to be harmful to humans or the environment, side selling harvested cassava roots, not honouring payment obligations, and other agreements included in this document. Notwithstanding the conditions above, either party may terminate the agreement by giving at least a month's written notice. If cultivation has been carried out, such termination will take effect at the end of the current farming season.

9. Environmental Impact Mitigation Requirements

- a. The processor and the outgrowers shall ensure that all activities are carried out in strict compliance with Environmental and Social Management System (ESMS) requirements, including requirements for the adoption of Sustainable Land Management Practices, Integrated Pest Management (IPM), and Integrated Soil Fertility Management (ISFM).
- b. Both parties shall ensure reasonable care is taken to prevent and minimize pollution, waste, and other environmental and social impacts arising from their operations.
- c. Both parties shall take full responsibility for safely disposing of all waste materials from farming and other related activities.

10. Signatories and witnesses.

IN WITNESS of which, the Parties hereto have caused this agreement to be signed in their respective names.

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Processor – Name & Signature

.....

Date

In the presence of:

Name:

.....

Address:

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Occupation:

.....

.....

Head of Outgrowers – Name & Signature

.....

Date

In the presence of:

Name:

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Address:

.....

Occupation:

.....

.....

Third Party – Name, Signature & Date.

In the presence of:

Name:

.....

Address:

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Occupation:

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