Terms of Reference (ToR) for the Development and Installation of a Digital Seed Verification System

Project Title: Reducing the Sale of Fake (Counterfeit) Seed Through Use of Digital Technology

Client: Zambia Seed Trade Association (ZASTA)

Location: [Lusaka, Zambia]

Duration: [4 months]

Date of Issue: [October, 2024]

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1. Background

The sale of counterfeit seeds is a significant problem that undermines agricultural productivity, reduces farmers' incomes, and hampers national food security. In response to this challenge, the Zambia Seed Trade Association (ZASTA) is implementing a project entitled "Reducing the Sale of Fake (Counterfeit) Seed Through Use of Digital Technology." One of the key activities under this project is the development of a digital infrastructure and software that will serve as a seed verification system, enabling farmers to verify the authenticity of seed without opening the bag. It is anticipated that this system will significantly reduce the sale of fake seeds and ensure that farmers access genuine, certified seeds thereby helping them to improve crop yields and output.

The system will involve capturing and storing unique codes representing seed lots in a server to be hosted at the Seed Certification and Control Institute (SCCI) in Lusaka. Scratch cards with the unique codes will be affixed onto seed labels, and farmers will use these codes to verify the authenticity of seeds by sending the code to the server, which will respond with verification details.

To achieve this, ZASTA and SCCI are seeking the services of a qualified digital solutions provider to develop, install, and maintain this digital seed verification system.

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2. Objectives of the Assignment

The main objective of this assignment is to design, develop, and implement a robust digital seed verification system that will enable farmers to verify the authenticity of seeds by using

scratch card codes linked to a central database located at the Seed Control and Certification Institute (SCCI), Mt. Makulu, Chilanga.

These ToRS will facilitate the procurement of the services of a qualified service provider to develop and install a **Seed Verification System** at SCCI.

This system will:

- Enable the capture and storage of unique codes representing seed lots on a secure server.
- Allow the generation of scratch cards with unique codes for placement on seed bags.
- Facilitate farmers to send unique codes through SMS, which will return relevant seed information and verify authenticity.

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3. Scope of Work

The service provider will be responsible for:

3.1. System Development

- **Design and Development:** Develop a digital seed verification system software with the following components:
    - **Database Integration:** A secure database to store information on seed lots (e.g., variety, batch number, origin, expiry date).
    - **Unique Code Generation:** Automated generation of unique, secure codes for each container in a seed lot.
    - **Verification Interface:** A user-friendly and low cost platform (SMS, USSD, mobile app, web portal) that allows farmers to verify seed information via unique code entry.
    - **Reporting Dashboard:** Administrative interface for SCCI staff to track and manage seed lots and verifications.

3.2. Database Setup

- **Installation and Configuration:** Install and configure the system on a cloud-based platform, depending on requirements.
- **Data Security:** Implement industry-standard security protocols to safeguard sensitive data.

3.3. Unique Verification Code Generation and Management

- **Design and Printing Support:** Develop a system for generating unique codes to be placed on the existing seed labels
- **Code Management:** Ensure codes are securely linked to the respective seed bags in a seed lot and can be accessed for verification through the system.

3.4. Integration with Mobile Networks

- Configure the seed verification system to work with all local mobile network service providers to ensure the seed verification system works with SMS or USSD services, allowing verification using the most basic phone.

3.5 Testing and Quality Assurance

- **System Testing:** Conduct comprehensive testing to ensure that all system components work seamlessly and data transmission is secure and accurate.
- **Pilot Testing:** Roll out the system on a pilot basis with select farmers and seed distributors.

3.6. Training and Knowledge Transfer

- **Training for ZASTA and SCCI Staff:** Provide training to SCCI and ZASTA staff on system usage, management, maintenance and troubleshooting.
- **User Documentation:** Prepare user manuals, guides, and troubleshooting documents for SCCI and end-users (farmers, seed distributors).

3.7. Maintenance and Technical Support

- Offer post-installation support, including system maintenance, migration and integration with other systems, bug fixes, and performance monitoring for a period of six months

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4. Deliverables

The service provider will deliver the following:

Deliverable	Timeline
A working database for seed lot information, unique code management, and reporting.	December 2024
Training materials and completed training sessions for SCCI staff.	December, 2024
Successful integration with mobile networks to support SMS or USSD verification.	January 2025
A detailed post-implementation support plan.	January, 2025
Comprehensive system testing and pilot results.	February 2025
A fully operational Seed Verification System	February, 2025

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5. Duration

The assignment is expected to take a total of **4 months** (November 2024 to February, 2025), from the date of contract signing to the completion of the installation and training.

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6. Reporting and Communication

The service provider will report to the Project Manager at ZASTA. Regular progress reports will be submitted as per the project schedule, with a final report at the end of the contract period.

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7. Qualifications and Experience

The service provider must meet the following criteria:

- Proven competence and experience in software development, particularly in creating verification systems or related digital infrastructure.
- Experience in integrating software systems with mobile telecommunications services (SMS, USSD, etc.).
- Expertise in database management and data security
- Demonstrated ability to provide training and ongoing technical support.
- Strong project management and communication skills.

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8. Submission Requirements

Interested service providers should submit the following documents:

- Company profile, highlighting relevant experience.
- Technical proposal outlining the approach, timeline, and methodology.
- Financial proposal with detailed cost breakdown.
- CVs of key personnel who will be involved in the project.
- Contact details of three recent clients for whom similar work has been successfully delivered.

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9. Evaluation Criteria

Proposals will be evaluated based on the following criteria:

- **Technical Competence:** Understanding of the scope and quality of the proposed solution (40%).
- **Experience and Expertise:** Proven track record in similar projects (30%).
- **Cost:** Competitive pricing for value delivered (20%).
- **Support and Training Plan:** Ability to provide ongoing support and effective training (10%).

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10. Deadline for Submission

Proposals must be submitted no later than **[05th November, 2024]** to the following address:

[zasta@zasta.net. cc godfreymwila@zasta.net]

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11. Contact Information

For further inquiries, please contact:

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