# The SeedAssure Alliance

# Introduction: SeedAssure Alliance and SeedAssureTM

Seed production and crop export sectors of Africa are substantially under-developed due to the shortcomings of current certification practices that present a barrier to private sector investment and growth. Today the SeedAssure Alliance is announcing that they have combined their unique skills and technologies to develop an affordable and scalable means to provide 'digital services' for certification and supply chain integrity which can be readily deployed in-country.

The Alliance is working together with donor groups to address the critical challenge of certification of seed crops, certification of export crops and associated supply chain integrity, for which significant market failures are currently attributed. All parties to the Alliance identified the need for a better seed production and certification practice, that empowered the certification provider, built trust with the industry and ultimately enabled a commercial African seed sector.

SeedAssure will strengthen two critical elements underpinning a profitable and resilient agricultural system both of which present intractable challenges in Africa that supress sector investment and growth; namely:

1. Seed production, through effective implementation of seed health regulations as supports private sector growth.
2. National crop biosecurity through seed phytosanitary standards and surveillance.

through the provision of a tool for:

- Seed crop managers and seed certification inspectors to document practices in cultivation and certification, respectively.
- National authorities to audit and monitor practices of seed certification, notably where the legal systems authorise licensed 3rd party seed certification providers, and
- Stakeholders of macro-data analytics on trends in seed industry performance and pest and disease prevalence, including new and emerging pest and disease events

All of the above are envisaged as a product, SeedAssure, a commercial service primarily for use by the seed industry (e.g. seed crop managers and seed buyers) and national and regional Governmental bodies for plant health (e.g. certification agents).

AGCUITY consulting

SeedAssure
Cellsoft Technologies

CIMMYT MR
International Maize and Wheat Improvement Center

AATF
PROSPERITY THROUGH TECHNOLOGY

NML
New Markets Lab

fera
Original thinking... applied

muddy boots SOFTWARE

# SeedAssure: Digital seed QA and certification platform

## What's the problem?

- Access to healthy seed is recognised as critical for food security in Africa, yet a major bottleneck to a vibrant seed industry lies within the certification process.
- Before reaching the farmer new varieties must go through multiple levels of pro-duction, each requiring a quality inspection, with the risk of failure (and losses) at each stage. Add to this additional trade compliance regulations of moving across borders, making certified seed production a significant investment for companies as well as farmers.
- A backlog of seed inspections, misdiagnoses, inadequate technical support for quality issues, and responses to urgent national issues like fake seed and disease outbreaks is severely limited, not only compromise quality, but create significant risk for commercial producers, dis-incentivizing new product adoption, variety turnover, and regional trade.

What's the problem?

**Quality production**

- Paper-based, subjective, inconsistent quality checks -> loss of crops; certifications
- Timeliness of production tasks, pest and disease management
- Inaccurate documentation, lack of information or access to production data

**Certification and licensing**

- Too few, untrained, paper-based Inspectors -> late inspections; mis-diagnoses; disputes; dis-incentive for variety turnover/ new product uptake

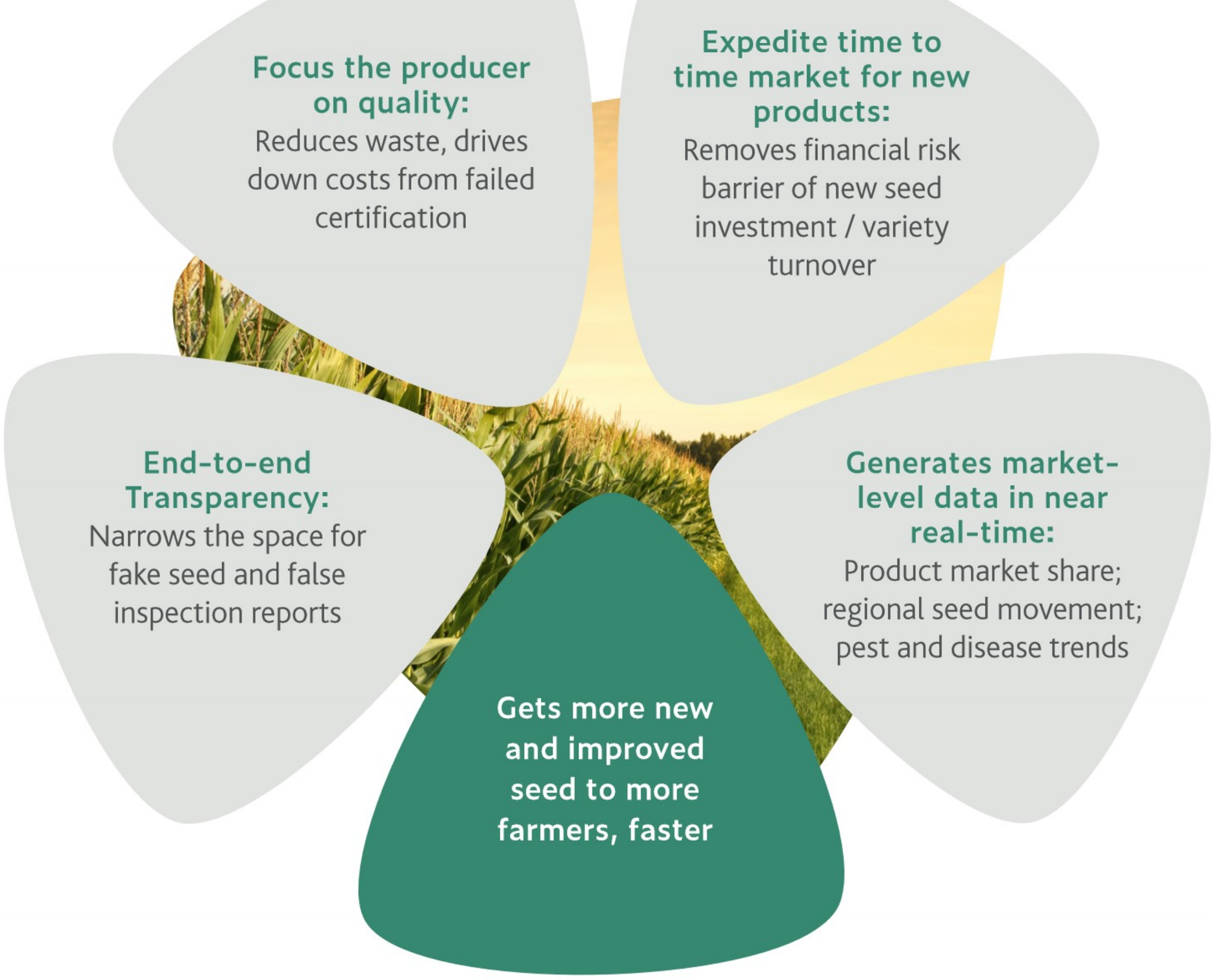
**Trade**

- Harmonized regulations not rolled out to Inspector, Manager, Border Agent level
- Various commercial names; paper systems; poor inspections -> delays, lost shipments

**Research & development orgs**

- Poor / no data on product deployment or market share, movement
- Major uncontrolled pest events, lack of response

# SeedAssure implications:
# So what's the big deal?




Getting NPPO's, Border agents, Seed companies and other key stakeholders **on the same platform** could **catapult new products to market** and regional trade like never before.

# The solution – SeedAssure

- Provision of seed inspection services by licensed third-party providers using digital data input software - *SeedAssure* - with Certification and oversight from regulatory agecies. We propose the development of a commercially-available IT platform that is easy-to-use, off-the-shelf and ready for widespread use. The software would employ standard-ized, updated quality measures and disease monitoring modules. Data is uploaded in real-time to a central cloud-based platform; records are geo-referenced and tagged to production site with reports transmitted to stakeholders on a 'Need' and 'Action' basis.
- The platform is not a 'reinvention of the wheel', but indeed supports existing 'tried and tested' methodology used in inspection for years - it simply sets out to make the process faster, more efficient, more effective and more sustainable for all partners in the supply chain.

**SeedAssure: Digital inspection services for seed certification**

Frontline services - Paid for by commercial clients

Quality assurance

Training modules

Certification report templates

Pest and disease management cards

Farmer app for data entry

Proficiency testing

Diagnostics lab platform

Core platform ('Big Data')

Support Line Services - NPPO - managed

Pest and disease surveillance

Trade license requirements and pest lists

Seed product, plot performance trends

## A Collaborative Environment

Research Scientist

Farmer

Tablet for field data collection by Inspectors

Agronomist

NPPO

Platform

SeedAssure

Secure, cloud-based database 'back-end

Seed Contractor

Agrovet

Private Seed Inspector

Seed House

Desktop dashboards, data and reports per user account

# SeedAssure: Value add as a digital seed QA and certification platform

SeedAssure platform

| Data user | Access and usage |
|---|---|

**Seed companies, farm managers**

- Full visibility of real-time data from each inspection check for their own crops only
- Monitoring of progress of production and certification-readiness; trouble alerts in real-time
- Pesticide Databases; Disease identification and response guides; GPS Lot mapping
- Lot performance history records (over time)
- Processing Facility Arrival/ Dispatch Assessments
- Distributor Arrival Check and Sales Confirmation
- In-Process Batch Control Labelling, Assessments
- Trend data: type and frequency of quality check sub-standard ratings per inspection type for their lots/ farms
- Single-window system: trade and transport docs lodged instantly into platform for all import/ export authorities to check down the line

**Seed inspection officers** (Public or Private)

Access to:

- Records they generate only and on a confidentiality basis with production clients
- Pesticide Databases; Disease identification and response guides; GPS Lot mapping

Functions:

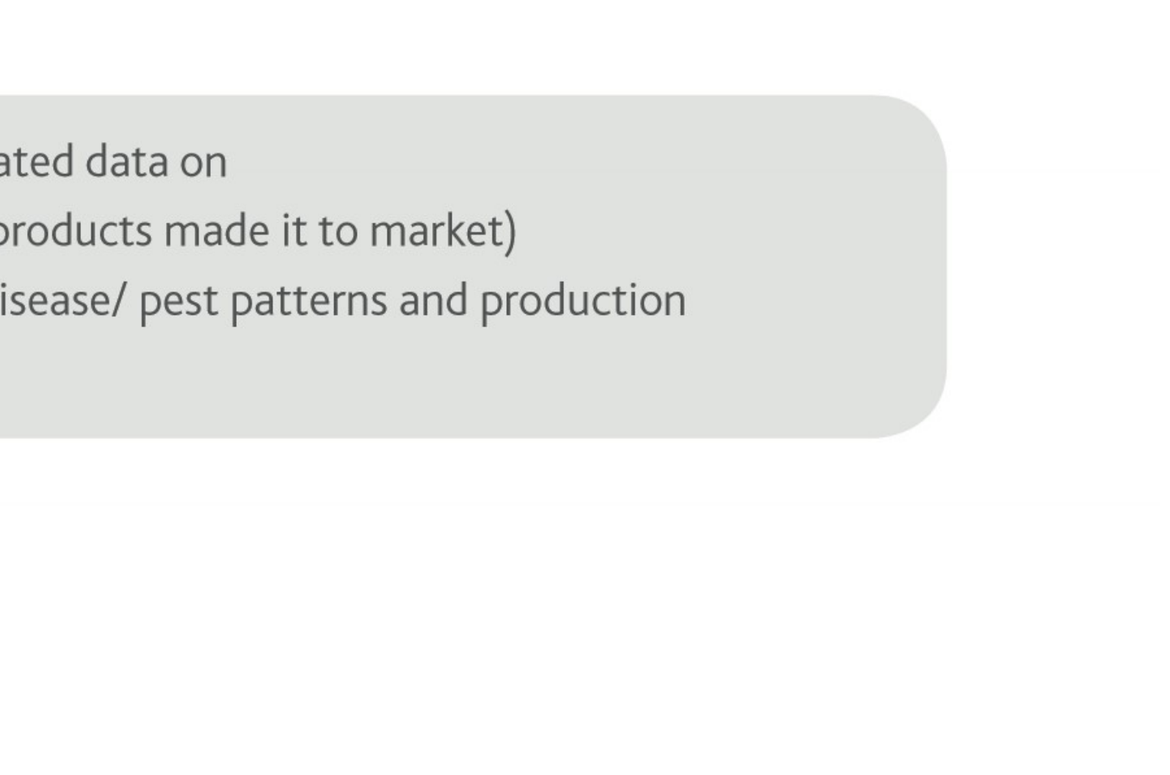
- Management of inspection requests, clients, schedules
- Remote software and spec updates
- Invoice generation and online payment processing

**National seed regulatory agencies**

Full access to headline data from each Inspection check:

- Grower, Inspector, Field and Crop registration numbers
- Inspector and Inspection load dashboard management
- Trends: number/ frequency of seed Inspection requests by location and product type
- Lot performance history records
- Pre-formatted data from step-wise checks to ensure inspections are scored and validated consistently
- Real-time pest and disease occurrence (trend data with high numbers of users)
- Rates of certification rejections at various stages; type and frequency of non-compliance issues
- Early Warning Systems for pests and disease

| Data user | Access and usage |
| --- | --- |
| Regional bodies | • Individual trade licenses per product and country/ies in their jurisdiction<br>• Product VINs cross-referenced to commercial names<br>• Regional Seed Catalogue cross-listings<br>• Aggregated market share and seed movement data |
| Seed product buyers (Farmers; Retailers) | • Evidence, assurance of certification<br>• production performance for forecasting sales |
| Research & development orgs | Real-time, national and regional aggregated data on<br>• Product market trends (which new products made it to market)<br>• Geo-referenced (Admin2 or finer) Disease/ pest patterns and production stage of occurrence |



# SeedAssure: Value add as a digital seed QA and certification platform

## Potential System-wide Benefits to the African Seed and Agriculture Sector

### Clearing the backlog

A single digital system coupled with standard training and licensing would professionalize and expand the Inspection service sector, filling the certification demand gap designed to grow with the seed sector and reduce the number of rejections and disputes.

### Traceability

The adoption of a common IT platform would ensure full traceability of all seed lots, measuring seed performance from the producer to processors to distribution to the farmer. Records would also creating accurate product data for regulators, researchers and investors, complementing Seed Harmonization and VIN efforts as well.

### Incentivize investment in new products

A fast and transparent inspection process would drastically reduce time, cost and risk of new seed products, spurring variety turnover and improved product access for farmers.

### Enhanced quality assurance

Standardized digital inspections coupled with technical references (variety keys, pests data sheets, etc.) would make access to scientific data in real-time and responses to quality issues in early stages for producer processors. The design is a single point of data entry via a device pre-programmed to get the best out of the inspection visit. Digital records would also afford historical data of seed and lots to inspectors for better assessments over time.

## Early warning system

Geo-referenced and near real-time field reports of quality issues, including pest and disease detection, would provide timely notification to producers and authorities of issues like FAW or MLN, allowing for rapid response measures to be deployed and outbreaks to be contained while creating disease trend data for both regulators and research agencies.

## Expediting trade

Single-window systems allow trade documents and transport data to be lodged instantly into a system to fulfill all import, export, and transit-related regulatory requirements. This system could also fit into tiered regional export license programs as well, accelerating trade and investment in quality seed. Using tried and true processes makes compliance easier, and reduces liability when required regulatory minimums are not met.

## Seed security, food security

Data on the area (ha) under seed production and quantities of seed produced along with seed health histories can be extracted (under a managed access system) to create reports allowing policy makers to make informed decisions to ensure regional seed - and food - security.

## Possible data trends

Pest Events - Disease Events - Production Timing data - General inspection performance & Cost - Yield and Quality - Grower Matrix, Processor Matrix and ultimately distribution matrix.

SeedAssure