



# HOW THE AGRICULTURAL RESEARCH COUNCIL COMMERCIALISES ITS CULTIVARS TO SMALLHOLDER FARMERS

*A case of citrus*

 **Dr Cynthia Motsi, Ms Nikki Combrink, Ms Salome Lingerfelder, Dr Elliasha Hajari & Dr Y Pakela-Jezile, Agricultural Research Council, South Africa**

**Ms Elna de Bruyn & Dr Noluthando Netnou-Nkoana, Department of Agriculture, South Africa**

 **21 October 2026, Geneva, Switzerland**

 **agriculture**  
Department:  
Agriculture  
REPUBLIC OF SOUTH AFRICA

 **ARC • LNR**  
Excellence in Research and Development

 **top** South Africa  
EMPLOYER 2026  
FOR A BETTER WORLD OF WORK

1



## Presentation Roadmap

- 1 South African Agricultural Context
- 2 Farmer Categories and Access Dynamics
- 3 ARC's Role in Agricultural Innovation
- 4 National Legislative Framework
- 5 Citrus breeding, Protection and commercialisation
- 6 National and International commercialisation of ARC varieties
- 7 Access to protected varieties by farmer category
- 8 Challenges, competition and policy category
- 9 Options for improving Smallholder access

2

## OVERVIEW OF THE SOUTH AFRICAN AGRICULTURAL SECTOR



### Why the sector matters

- **Food security:** Supplies staple, horticultural and animal-source foods.
- **Economic contribution:** Supports agro-industrial development, exports and rural economies.
- **Employment:** Provides jobs across farms, input supply, logistics, processing and services.
- **Innovation platform:** Drives technology adoption, climate resilience and value-chain competitiveness.

### The sector in numbers — 2024

**R460.2bn**

Primary agricultural production

**R182.2bn**

Contribution to GDP

**US\$13.7bn**

Agricultural exports

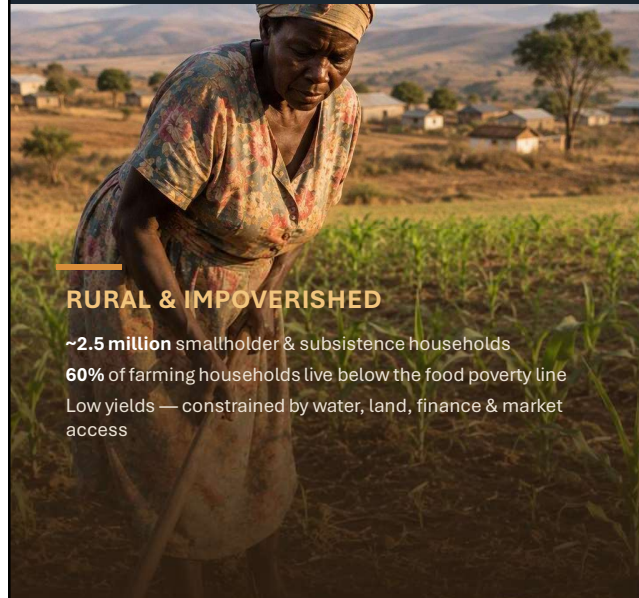
**840,407**

Commercial agriculture employees

3

## SOUTH AFRICA'S DUAL AGRICULTURE

*A country of two agricultures — worlds apart in scale, wealth and technology*



### RURAL & IMPOVERISHED

~2.5 million smallholder & subsistence households  
60% of farming households live below the food poverty line  
Low yields — constrained by water, land, finance & market access

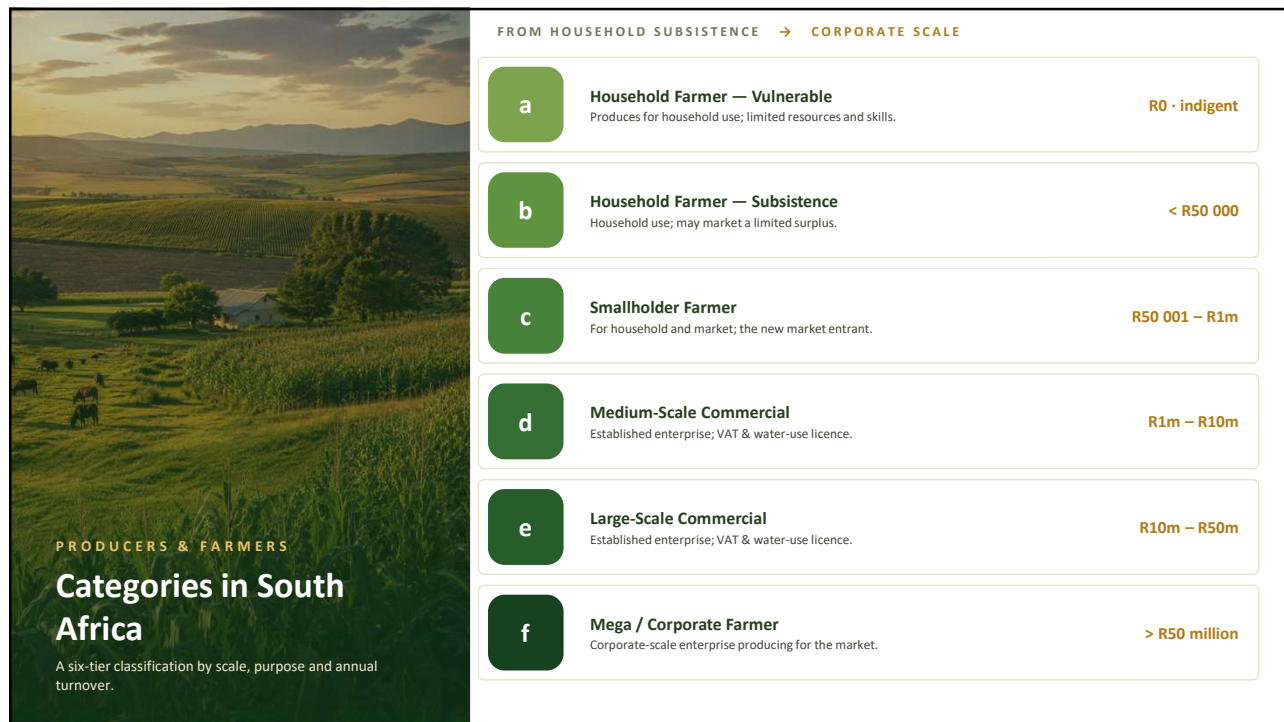


### COMMERCIAL & SOPHISTICATED

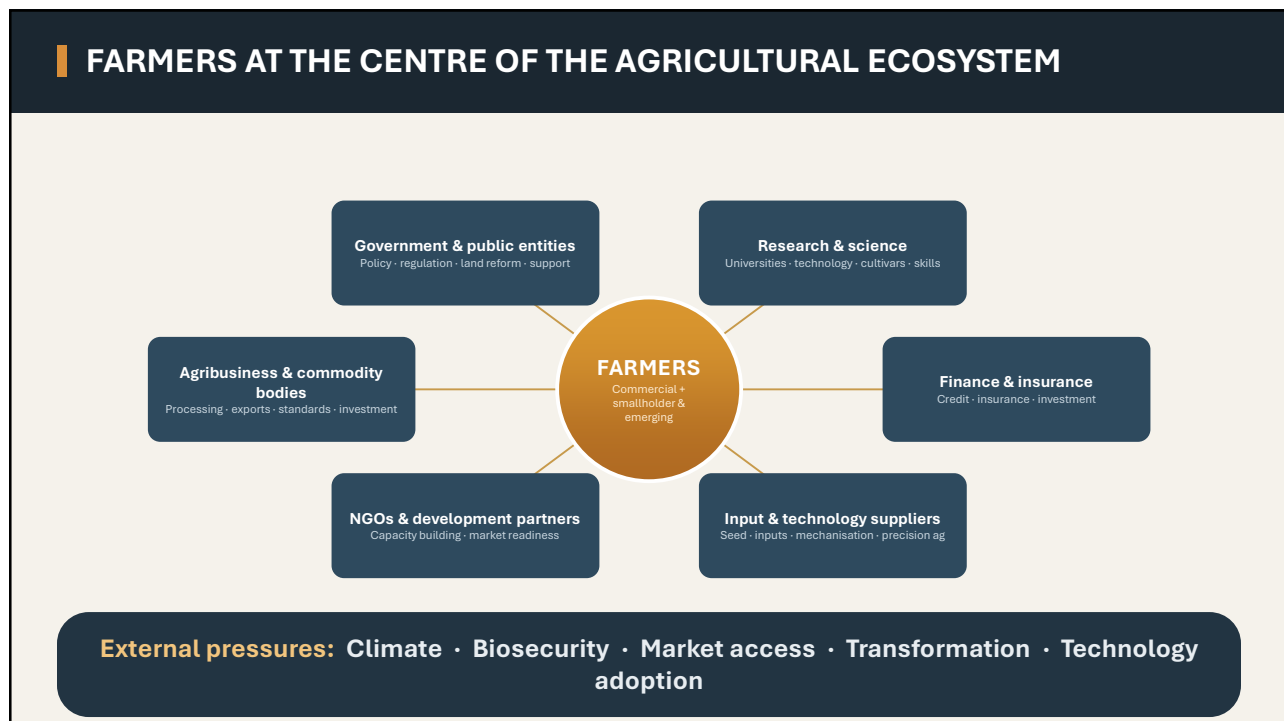
~32,000 farms — just 5,000–7,000 grow 80% of output  
R266bn agri-exports & a record R125bn trade surplus (2025)  
Precision tech — drones, satellite mapping & smart irrigation

Sources: Stats SA; HSRC; AgriSA; Agbiz (2022–2025)

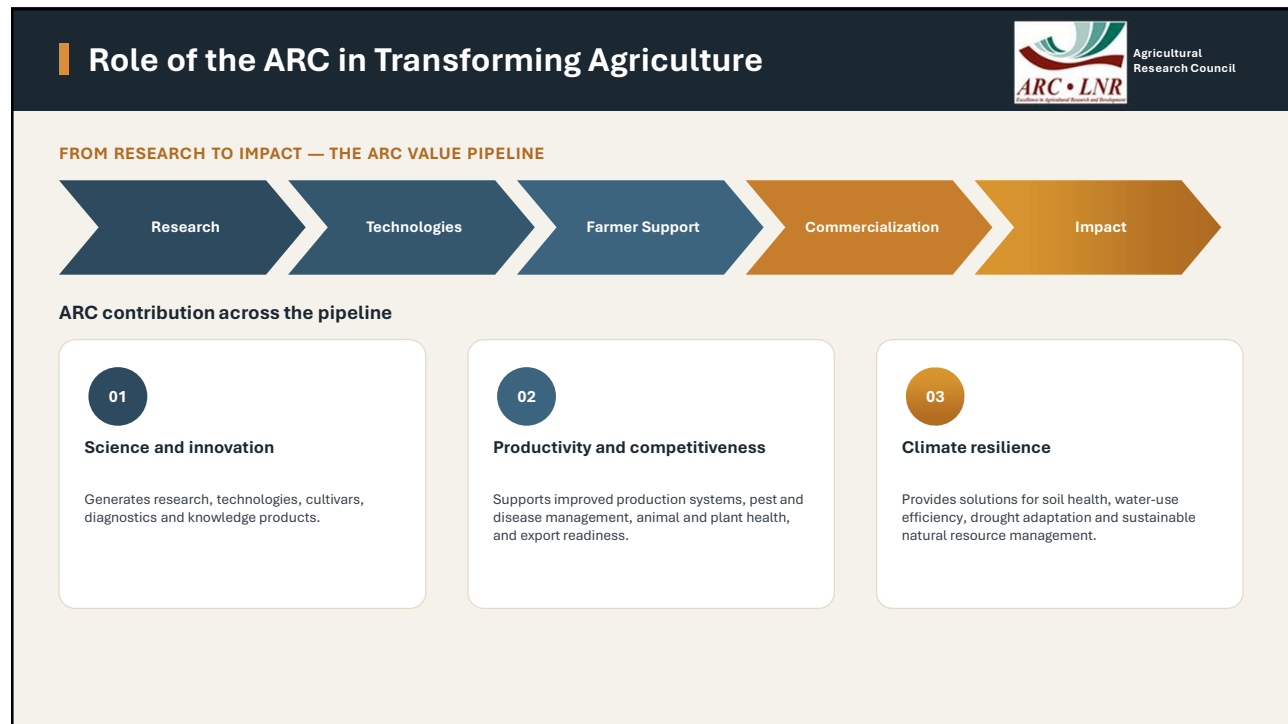
4



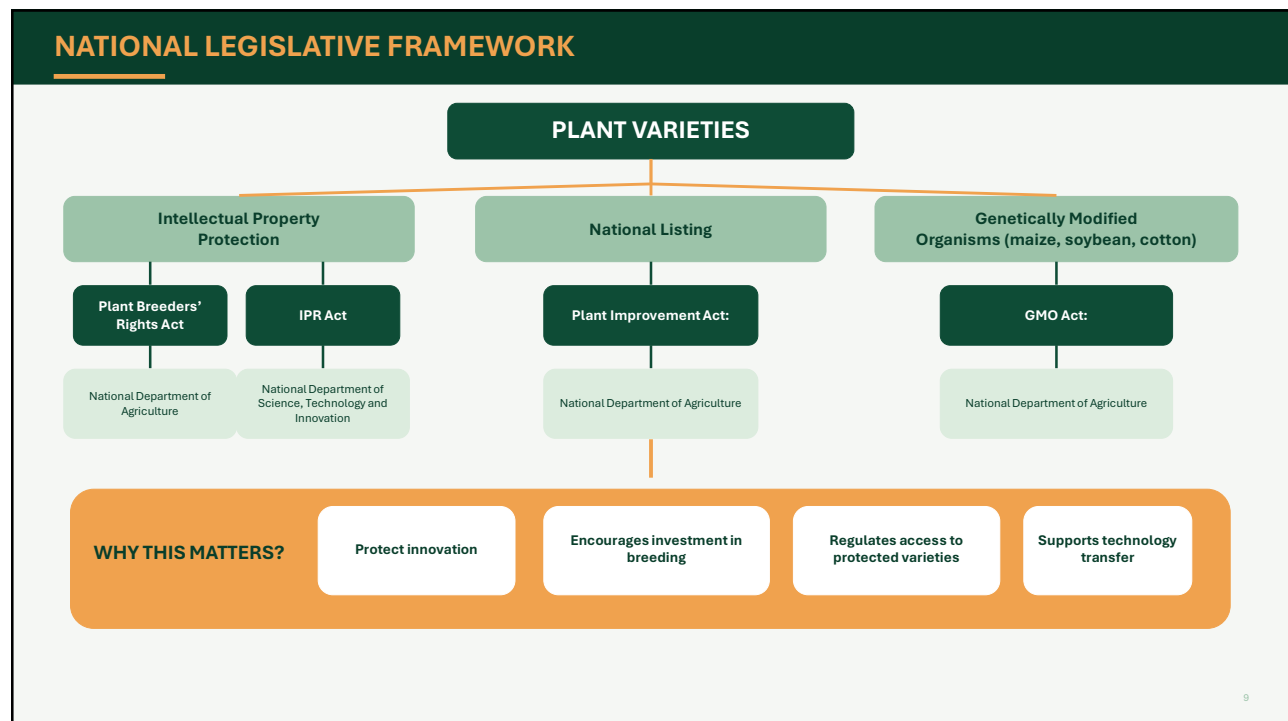
5



6



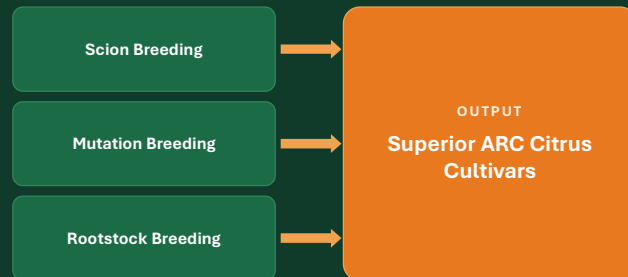
7



8

## CITRUS BREEDING PLATFORM

- ARC has a long-standing citrus research legacy, with citrus evaluation blocks dating back to 1930.
- A coordinated citrus breeding programme was initiated in 1974 at Addo Research Station.
- The programme integrates scion, mutation and rootstock breeding to generate superior cultivars.



## BREEDING PRIORITIES



9



## ENGAGEMENT PLATFORM

### Cultivar Days

New selections exiting the R&D pipeline are showcased to growers and licensing partners.



**Showcasing ARC-bred cultivars at Cultivar Days**

10

## CULTIVAR PROTECTION & LICENSING

- Superior cultivars are protected under Plant Breeders' Rights, securing ARC's intellectual property and legal ownership.
- Protected cultivars are commercialised through licensing agreements with nurseries, growers and industry partners.
- Licensing generates royalty income that is reinvested into continued breeding and research.
- Clear, well-governed licensing underpins equitable access to improved planting material.

1 **PROTECT**  
Plant Breeders' Rights



2 **COMMERCIALISE**  
Licensing Agreements

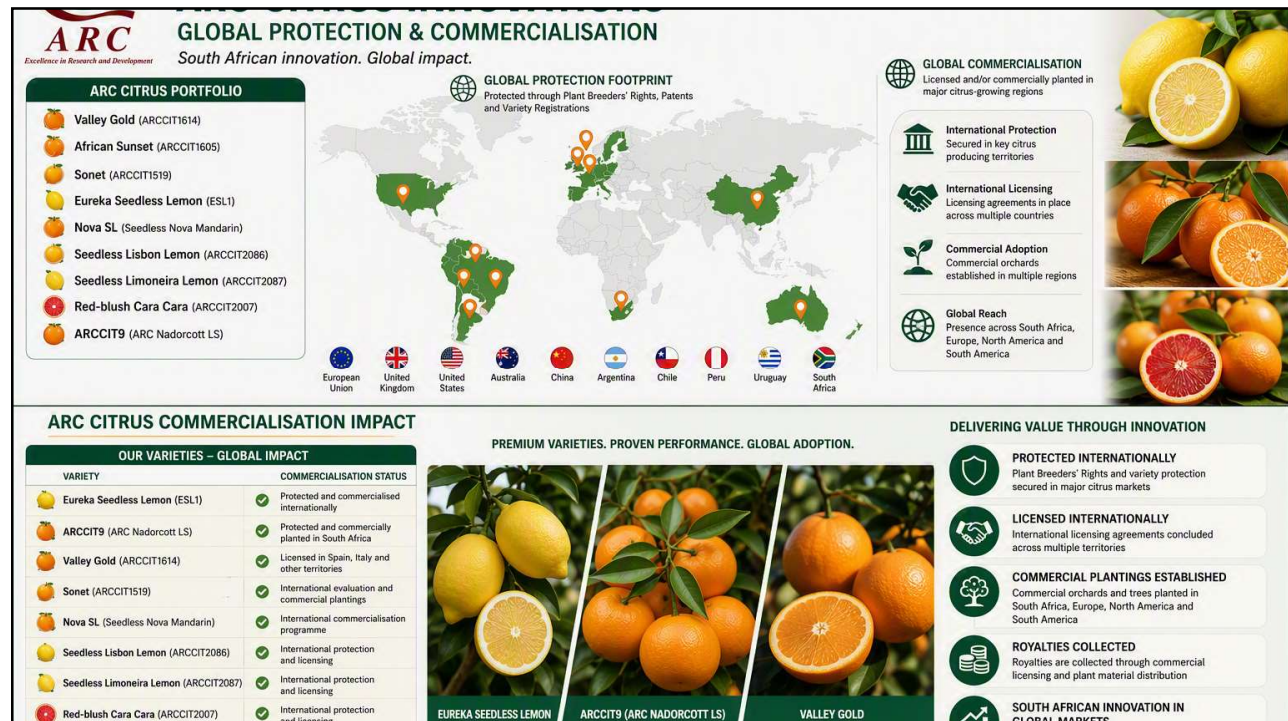


3 **SUSTAIN**  
Royalty Reinvestment

### THE COMMERCIALISATION LOOP

Royalties from licensing are reinvested into ARC's breeding programme, sustaining a self-funding innovation cycle that widens equitable access to improved cultivars.

11



12

## Access to ARC protected cultivars

1

### Formal licensing

ARC protected cultivars are accessed through licensing agreements.

2

All qualifying farmer categories may apply for material.

3

### Contracting depends on the farmer category

The access process is the same for all crops.

#### DIRECT WITH ARC

ARC contracts directly with the relevant farmer category.

#### THROUGH THE MASTER LICENSEE

Where ARC does not contract directly, the master licensee must source and contract with that category.

4

### Access for smaller farmers

1

#### EOI

Reach widely



2

#### ASSESS

Apply criteria



3

#### ALLOCATE

ARC or licensee



4

#### CONTRACT

Provide material

KEY MESSAGE

**Material is available to all who qualify.**

14

13

## Key bottlenecks and considerations

1

**Access:** Smallholder growers often lack equitable access to high-quality ARC-bred planting material.

2

**Legal Certainty:** Clear provision for vulnerable and subsistence farmers, not clear how to cater for small-holder farmers who in South Africa are a category between subsistence and commercial farmers.

3

**Transparent Beneficiary Selection:** A clear, auditable process is needed to select beneficiaries fairly and transparently.

4

**Administrative Complexity:** Target farmers may struggle with complex licence agreements.

5

**Food Security vs Commercialisation:** ARC must balance its food-security mandate against the royalty income that sustains breeding programmes.

6

**Uncertainty on Free Allocation Thresholds:** Little guidance exists on how much protected material can be provided before triggering added approvals or obligations.

7

**Monitoring and Reporting Requirements:** Effective systems are needed to ensure transparency, compliance and accountability.

15

14

## INCLUSIVE CULTIVAR COMMERCIALISATION

- ARC commercialisation translates publicly funded R&D outputs into economic, developmental and market value.
- The citrus case demonstrates how improved cultivars can support both commercial competitiveness and smallholder inclusion.
- The central challenge is moving innovation from breeding outputs to equitable grower access and market adoption.



### COMMERCIALISATION VALUE CHAIN from research to market impact



15

## FARMER ACCESS & MARKET IMPACT

- Licensed cultivars reach growers, including smallholder producers, through structured and transparent access pathways.
- Improved selections lift fruit quality, yield and market timing, strengthening grower competitiveness.
- Broader access supports rural livelihoods and the inclusion of emerging farmers in commercial value chains.
- Market adoption returns value to ARC and the industry, sustaining continued investment in citrus innovation.

### THE GOAL

Translating breeding excellence into equitable grower access and lasting market impact.

### IMPACT OUTCOMES

#### Equitable Access

Improved cultivars reach commercial and smallholder growers alike.

#### Grower Competitiveness

Higher quality, yield and better market timing lift returns.

#### Inclusive Growth

Emerging farmers enter commercial citrus value chains.

#### Sustained Innovation

Market value is reinvested to keep the breeding pipeline funded.

16

## ACCESS TO PROTECTED VARIETIES BY FARMER CATEGORY

*Citrus Case Study*

### MEGA / CORPORATE FARMERS

High access • Direct licensing and commercial channels

### LARGE-SCALE COMMERCIAL FARMERS

High access • Licensed nurseries

### MEDIUM-SCALE COMMERCIAL FARMERS

High access • Licensed nurseries

### SMALLHOLDER FARMERS

Limited access • BBBEE and development initiatives

### HOUSEHOLD - SUBSISTENCE

Tree sales and distribution programmes • No direct licensing

### HOUSEHOLD - VULNERABLE

Tree sales and distribution programmes • No direct licensing

Commercial farmers generally access protected citrus varieties directly through licensed nurseries and licensing agreements. Smallholder and household farmers primarily access improved planting material through development, transformation and tree distribution programmes.

17

## CHALLENGES AND IMPROVEMENT OPPORTUNITIES

### Challenges

- 1 Access is not uniform across all farmer categories
- 2 Limited distribution networks in underserved areas
- 3 Affordability constraints for smaller-scale farmers
- 4 Limited availability of planting material
- 5 Low participation of smallholder farmers in formal licensing arrangements

### ARC Response

- 1 Encourage inclusion through BBBEE commitments
- 2 Promote development programmes with commercial partners
- 3 Expand access pathways for smallholder and vulnerable farmers
- 4 Explore mechanisms to improve availability of protected varieties across all farmers categories

19

18

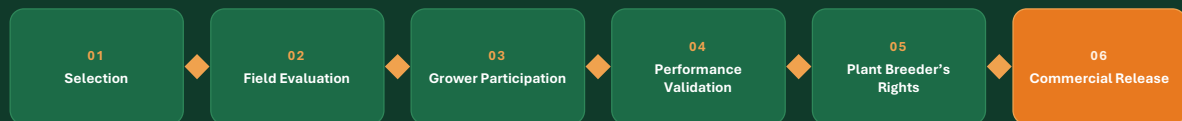
## EVALUATION & MARKET READINESS

- Improved cultivars are evaluated for performance in relevant agro-climatic zones.
- Cooperative growers may be engaged through a transparent Expression of Interest process.
- Material Transfer Agreements protect plant material during evaluation.
- Stable and consistent selections are protected through Plant Breeder's Rights before commercial release.

### GOVERNANCE CONTROLS

- EOI** Transparent Expression of Interest for cooperative growers.
- MTA** Material Transfer Agreements safeguard plant material during evaluation.
- PBR** Plant Breeder's Rights secure stable selections before release.

### STAGE-GATE PATHWAY



19

## COMMERCIALISATION & STAKEHOLDER BUY-IN

- Cultivar Days create visibility for new selections exiting the R&D pipeline.
- Growers, licensing agents and stakeholders can directly assess cultivar quality and market potential.
- Licensing enables ARC intellectual property to be marketed and distributed through capable commercial partners.
- Transparent Expression of Interest processes reduce bias and support fair appointment of growers and licensees.



20

## COMPETITION COMMISSION INVESTIGATIONS

**1** Statutory body empowered to investigate, control, and evaluate restrictive business practices, abuse of dominant positions and mergers in order to achieve equity and efficiency in the South African economy.

**2** Example of a case referred by farmers to the Competition Commission:

**2.1** Large cooperatives develop and protect varieties under the Plant Breeders' Rights Act.

**2.2** Strategy to discontinue use of a protected variety before expiry of its plant breeders' right, replacing it with a new protected variety.

**2.3** This strategy means that:

- access to varieties becomes limited through the removal of the genetic material.
- Smallholder farmers are coerced to only grow varieties with PBR protection as other varieties are "removed" from the public domain

**3** Smallholder farmers are unable to get the ideal seed for their use as it is either phased out or no longer available.

22

21

## CONSIDERATIONS

**Develop Clear Guidelines:**

Set clear criteria and thresholds for use of protected material by smallholder farmers.

**Align Licensing with Development:**

Ensure licensing arrangements support both commercial sustainability and developmental objectives.

**Balance Food Security and Sustainability:**

Advance food-security objectives while safeguarding royalty income and the long-term sustainability of breeding programmes.

**Strengthen Policy Alignment:**

Develop clear implementation guidance for smallholder farmers to ensure consistent, transparent and compliant application.

23

22

## EXECUTIVE STRATEGY FOR SMALLHOLDER ACCESS

- Develop cultivar baskets for commercial and smallholder production.
- Strengthen ARC propagation and nursery-management training.
- Support nursery enterprises and access to quality planting material.
- Apply inclusive licensing where legally permissible.
- Promote agro-processing as an additional income pathway.

### ARC CAPACITY IN PRACTICE

#### Example from one crop

- Training on identifying selections
- Nursery-management basics
- Formal two-day course
- Agro-processing activities

### SOLUTION PATHWAY

#### Cultivar Basket

Selections for commercial and smallholder contexts.

#### Nursery Capacity

Practical training and nursery enterprise support.

#### Inclusive Licensing

Access models where legally permissible.

#### Agro-processing Opportunities

Value-added income pathways.

**Smallholder Market Participation**

23

# THANK YOU

## Questions or enquiries?

### CONTACT DETAILS

#### Dr Cynthia Motsi

Agricultural Research Council, South Africa  
motsic@arc.agric.za | +27 (12) 427 9832

#### Ms Elna de Bruyn

Department of Agriculture, South Africa  
ElnaDB@nda.gov.za | +27 (12) 319 6096

Republic of South Africa

24