Options to Access CIMMYT Germplasm

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What is CIMMYT (International Maize and Wheat Improvement Center)

• **Mission:** To sustainably increase the productivity of maize and wheat systems to ensure global food security and reduce poverty

• Safeguard maize and wheat germplasm

• > 250 International Scientists

• > 1500 Staff

• HQ in Mexico, 16 regional offices

• Budget: 160 million USD
Maize and Wheat What the World Eats!

- Two important crops that occupy 44% of the area cultivated in the developing world.
- Together maize and wheat count for 25% of the proteins consumed in the developing world.
- Both cereals are important for resource poor farmers depending on agriculture for their income, food security and livelihoods.
- 80% of the produced maize and wheat is consumed locally.
- The increased human population results in increased demand.

CIMMYT’s Maize Germplasm Bank contains over 28,000 unique collections of maize seed and related species from 88 countries.

The collections are a source of diversity to breed for traits such as heat and drought tolerance and resistance to diseases and pests, and to improve grain yield and grain quality.”
Many of the hybrids on the market in Zimbabwe are CIMMYT germplasm

- CIMMYT is the largest contributor of improved maize germplasm annually as international public goods.
- Over 54% of publicly bred maize varieties released in the developing world are reported to have CIMMYT's elite maize germplasm
Germplasm uptake

More than 150 varieties developed at CIMMYT Zimbabwe are currently under commercialisation in Africa and Asia.
Variety Releases in 2015

- Malawi: 4 releases
- South Africa: 10 releases
- Swaziland: 1 release
- Zambia: 8 releases
- Zimbabwe: 3 releases

Symbols:
- A: Pro-vitamin A
- Drought
- Drought + low nitrogen
- Drought + low nitrogen + QPM
What is the Purpose of Variety Release and Registration?

• To ensure **DUS** varieties enter the market

• To ensure that the variety has a minimum value for cultivation and use (**VCU**)

• Stimulates use of increasingly better varieties

• Stimulates good breeding programs

**Protection for the breeder and the farmer**
CIMMYT Variety Allocations

• Every year CIMMYT conducts **Regional Maize Trials**
  – 75% entries come from CIMMYT 25% from partners

• In August an invitation is sent out with Regional Trial report for requests for CIMMYT products.

• Requests are sent to GMP Director

• Allocations are made in September-October
Access to CIMMYT Maize Inbred lines

- CIMMYT's elite maize inbred lines and trait donors for:
  - Abiotic stress tolerance (drought, Low N, Low pH)
  - Biotic stress resistance MLN, MSV, GLS
  - Nutritional quality (QPM, provitamin A)
- Free to access on request for breeding purposes from breeders or gene bank
Access to Maize Hybrid

- **Hybrids**
  - Given on confidential basis
  - Institution become the maintainer of the hybrid
  - Unique name can be given
  - Given for commercialization for specific countries on request
  - Rights remain with CIMMYT
  - CIMMYT doesn’t release varieties but only through partners
  - Seed companies promise commercialize and scale the hybrid within given time frame
Access to Maize OPVs

• Maize OPVs
  • The institution that registers becomes the maintainer
  • Agrees to provide foundation seed to other companies
  • Other companies may commercialize the same OPVs using same name but their own packaging material
Support from CIMMYT

- CIMMYT provide small quantities of breeders’ seed
- VCU and DUS data for registration
- Hybrid seed production information
- Technical backstopping
- Seed production training
- Socio-economics studies

![Graph showing Days to 50% Anthesis vs Altitude (m) for various inbred parent trials in Zimbabwe 2012/13.]

![Bar chart showing Single Cross female yields in 2014 with various combinations of inbreds and single crosses.]

![Photo of three individuals in a maize field with CIMMYT ADV 655W signage.]
• Over the past four years approximately **823 seed shipments** have been made

• **1.3 million envelopes** to 315 institutions

• Seed shipments are accompanied by the required phytosanitary documentation and a Standard Material Transfer Agreement (SMTA).
Africa

65,000 tons drought-tolerant maize seed produced in 2015 due to CIMMYT support.
Thank you for your interest!