Role of CIMMYT for Conservation, Use and Exchange of Native and Local Seeds – Promoting Regional Cooperation

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Conservation...

With more than 175,000 accessions, CIMMYT maintains the world’s largest maize and wheat seed bank.

Wheat (150,000 accessions) and maize (27,000 accessions)
More and more genetic Resource are being identified and conserved
Svalbard vault: CIMMYT germplasm
Seeds of Discovery:
Global strategy for the enhanced use of maize and wheat genetic resources
Extensive breeding program

Source: Richard, 2009
Use...

Global partnerships on wheat and maize breeding
SAARC countries face almost similar challenges
CIMMYT seed is made freely available to researchers and national agriculture institutions.

Over the past 25 years, CIMMYT has distributed more than 91,000 maize and 158,000 wheat varieties to researchers and farmers around the world.
The size of the font indicates the relative size of the distribution.

Source: T. Payne, CIMMYT
CIMMYT Wheat Germplasm Bank holds accessions from

Turkey, Mexico, Iran, China, Switzerland, Pakistan, India, Former USSR, Russia, Brazil, Canada, Former Yugoslavia, Portugal, Afghanistan, Argentina, Australia, Ethiopia, Germany, Syria, Chile, Poland, Spain, Nepal, India, Iraq, Egypt, Tunisia, France, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, Greece, 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Several collaborative programs:

- Rice-wheat consortium
- Cereal System Initiative in south Asia (CSISA) – India, Nepal, Bangladesh, Pakistan
- USAID seed project – 6 countries
- HarvestPlus – India, Pakistan
- Borlaug Global Rust Initiative (BGRI) – Several countries
- SAARC platform
- Seed exchange through common trials from CIMMYT

Germplasm is the mantra
data exchanged among countries
We have managed of Ug99 stem rust fungus through efficient germplasm exchange

- Eleven races now known; Presence in 13 countries confirmed; Localized epidemics in Ethiopia, Kenya & other east African countries
Shuttle breeding

Cd. Obregón 39 masl
High yield (irrigated), water-use efficiency, heat tolerance, leaf rust, stem rust

El Batán 2249 masl
Leaf rust, Fusarium

Toluca 2640 masl
Yellow rust, Septoria, Fusarium

Njoro, Kenya 2185 masl
Stem rust, Yellow rust

Global shuttle including S Asia
Current Germplasm Flow: CIMMYT-Nepal

CIMMYT: 1500 lines each year

Kenya: 150
Biofortified wheat varieties developed using conserved germplasm

Photo: biofortified.org
Related species are good Zn sources; *T. spelta* appears the best.
Reaching Zn Shakti wheat to farmers - an example

- First tested in India
- **2013**: 1000 mini-kit trials
- **2014**: >6000 farmers adopted Zn Shakti wheat
- **2015**: >50,000 farmers = 2,50,000 household members will benefit

Productive partners: BHU, Sai Seeds, Nirmal seeds, Astha Beej etc.
In the last 5 years, 55 wheat varieties were released in India, Nepal, Bangladesh & Bhutan. 31 CIMMYT introductions and 24 locally bred varieties.
CIMMYT with national system is playing significant role in conservation, exchange and use of wheat and maize germplasm. Regional cooperation is integrated.

The way forward is taken care through collaborative programs – such as for climate change.
Thank you for your interest!