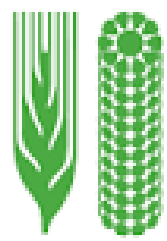


# **Role of CIMMYT for Conservation, Use and Exchange of Native and Local Seeds – Promoting Regional Cooperation**

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**CIMMYT**

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# CIMMYT<sup>MR</sup>

International Maize and Wheat Improvement Center

## Centro Internacional de Mejoramiento de Maiz y Trigo



# 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**



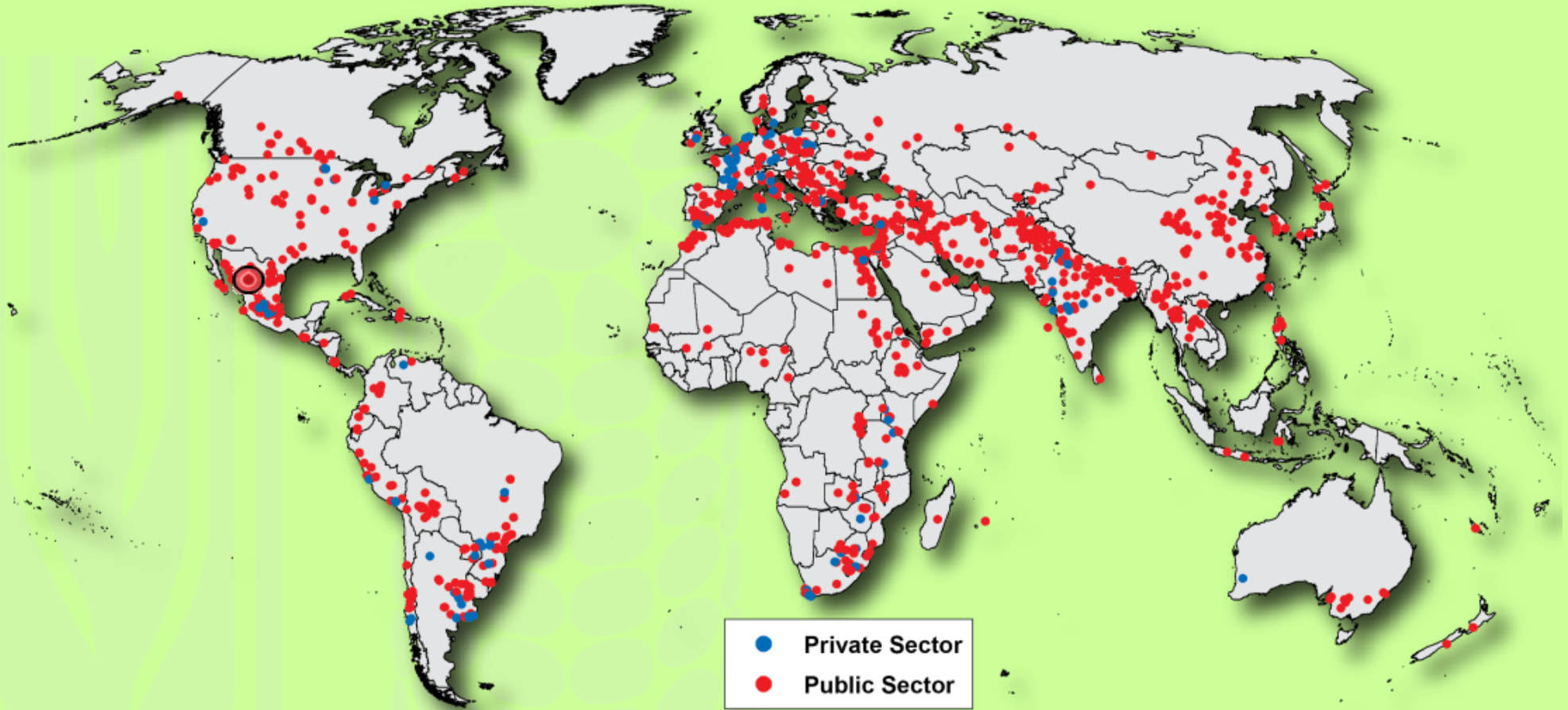
An aerial photograph of a vast agricultural field, likely a cornfield, showing a grid-like pattern of rows. A prominent red diagonal banner is overlaid across the center of the image, containing the text "Extensive breeding program" in white, bold, sans-serif font. The banner starts from the bottom left and extends towards the top right. The background shows the golden-brown rows of crops, with some green areas and a road visible in the upper left corner.

**Extensive breeding program**

Source: Richard , 2009

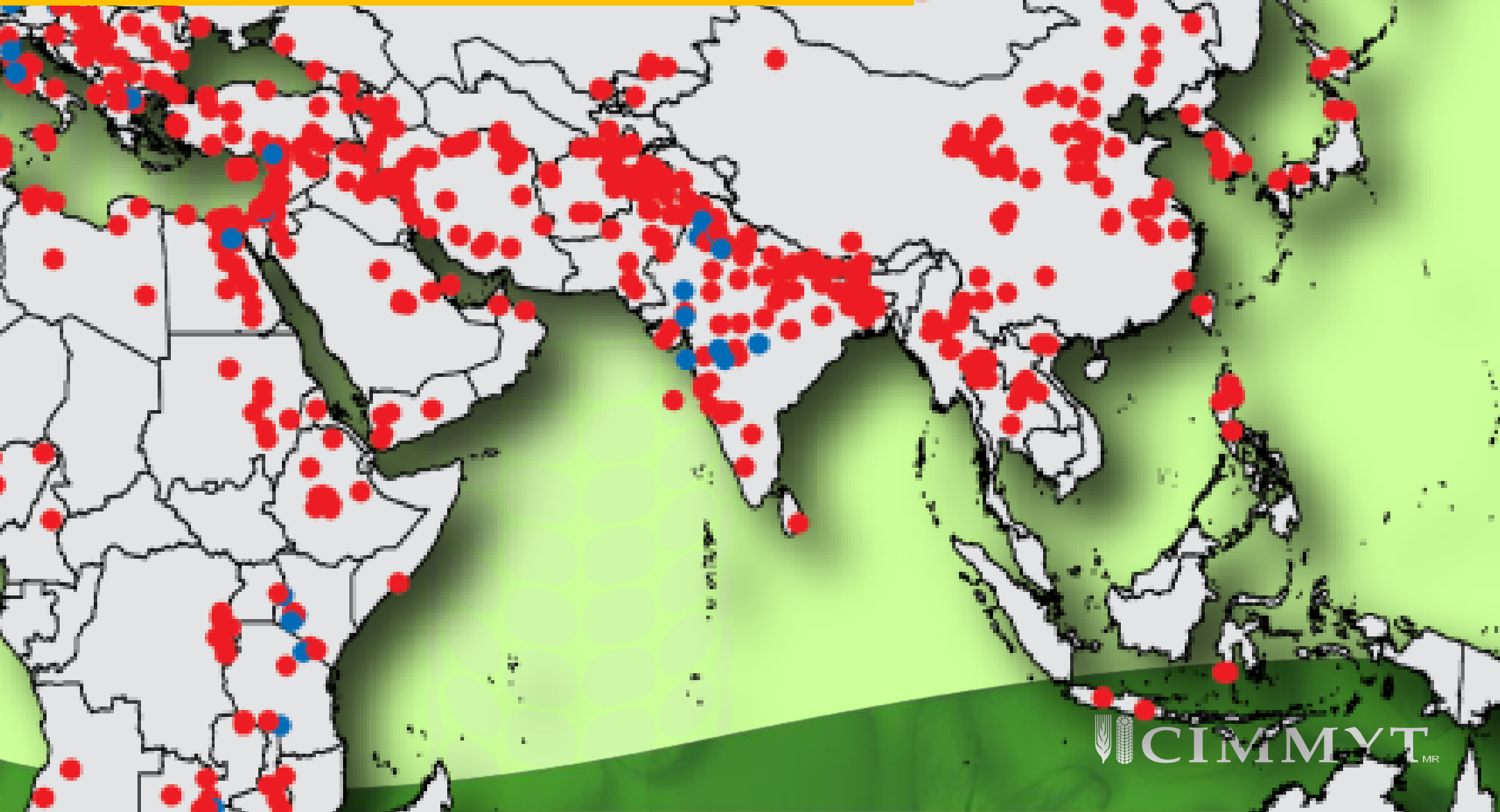
# Use...

## Global partnerships on wheat and maize breeding





# SAARC countries face almost similar challenges



# Exchange...

**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.**

# CIMMYT International Wheat Improvement Network Partners

(Nurseries distributed 2001-2013)



## Germplasm

The size of the font indicates the relative size of the distribution



Other Partners: Albania, Angola, Austria, Belarus, Belgium, Belize, Bhutan, Botswana, Burkina Faso, Cameroun, Colombia, Croatia, Cuba, Cyprus, Czech Republic, Denmark, Eritrea, Estonia, Fiji, Gambia, Guatemala, Guyana, Honduras, Indonesia, Ireland, Jamaica, Japan, Jordan, Kyrgyzstan, Lebanon, Lesotho, Lithuania, Macedonia, Malawi, Mali, Mauritius, Moldova, Mongolia, Netherlands, New Caledonia, New Zealand, Nicaragua, Qatar, Rep. Congo, Senegal, Somalia, Sri Lanka, Swaziland, Taiwan, Turkmenistan, Uganda, United Arab Emirates, Venezuela, Viet Nam

# CIMMYT Wheat Germplasm Bank holds accessions from



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tagxedo.com

**Other accession donors:** Albania, Algeria, Angola, Armenia, Bangladesh, Belarus, Bolivia, Bosnia and Herzegovina, Burundi, Costa Rica, Croatia, Cyprus, Denmark, Eritrea, Finland, Georgia, Guatemala, Honduras, Indonesia, Ireland, Kazakhstan, South Korea, Kyrgyzstan, Libya, Lithuania, Macedonia, Malawi, Mali, Malta, Moldova, Mongolia, Montenegro, Mozambique, Netherlands, New Zealand, Niger, Nigeria, Norway, Oman, Palestinian Territory, Paraguay, Philippines, Saudi Arabia, Serbia, Slovakia, Slovenia, Sudan, Taiwan, Tajikistan, Tanzania, Thailand, Turkmenistan, USA, Uzbekistan, Venezuela, Yemen, Zaire, Zambia, Zimbabwe, CIMMYT, and ICARDA



# Several collaborative programs

- Rice-wheat consortium
- Cereal System Initiative in South Asia (CSISA) – India, Nepal, Bangladesh, Pakistan
- USAID seed program in 10 countries
- HarvestPlus in India, Pakistan
- Borlugh and Rust in Russia

**Germplasm is the mantra**

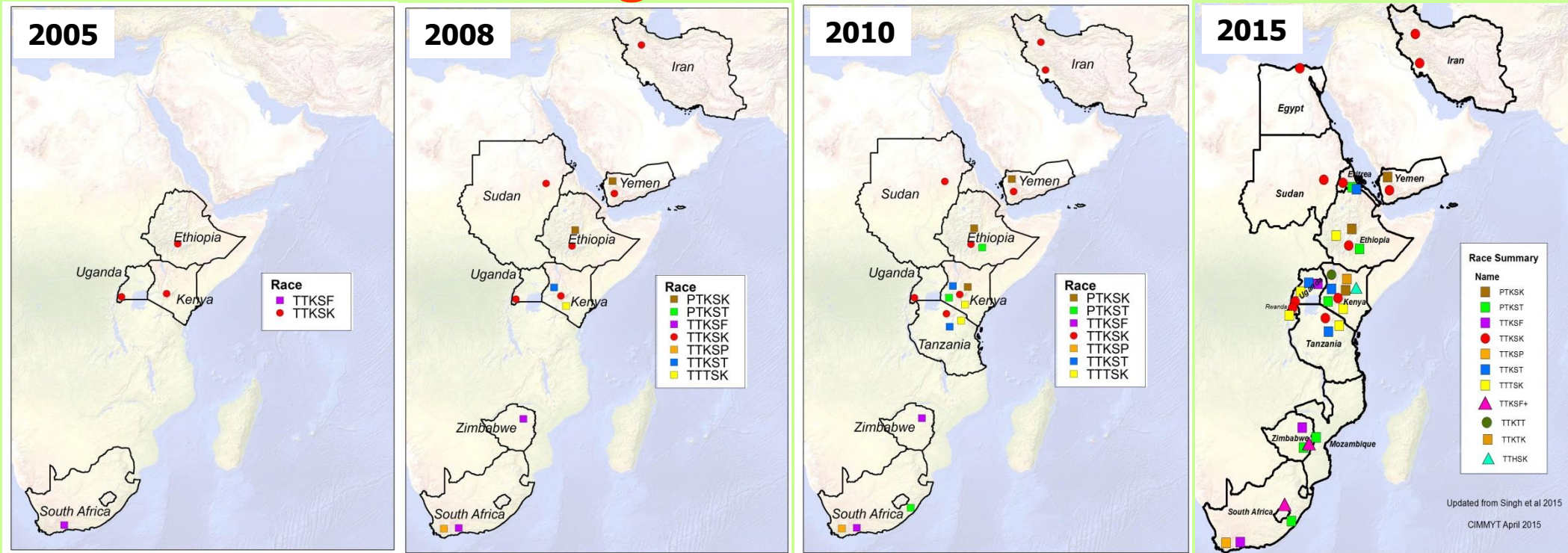
**Data exchanged among countries**



Photo: vahomeloancenters.org

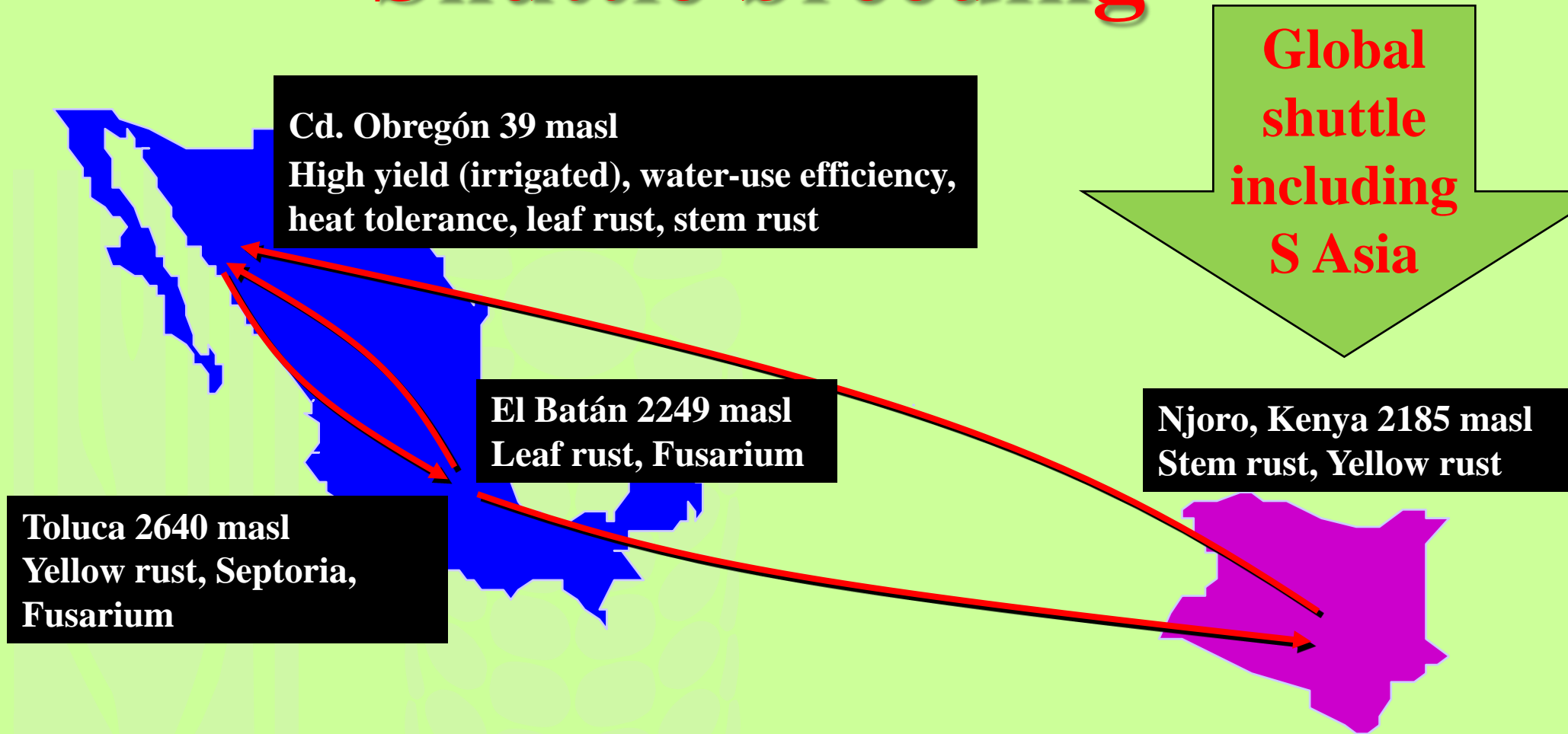
Seed bank common  
trial from CIMMYT

# We have managed of Ug99 stem rust fungus through efficient germplasm exchange

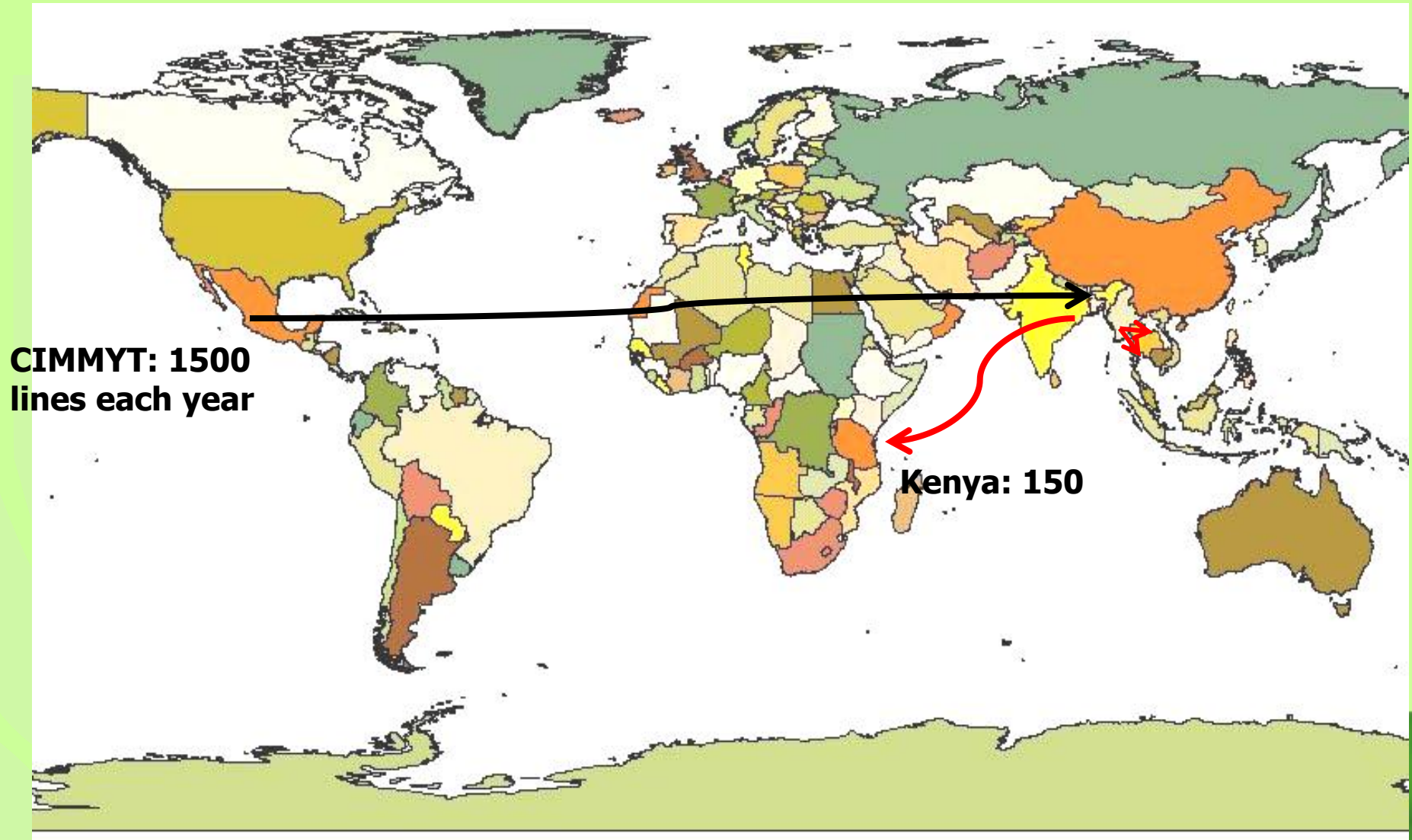


- Eleven races now known; Presence in 13 countries confirmed; Localized epidemics in Ethiopia, Kenya & other east African countries

# Shuttle breeding



# Current Germplasm Flow: CIMMYT-Nepal



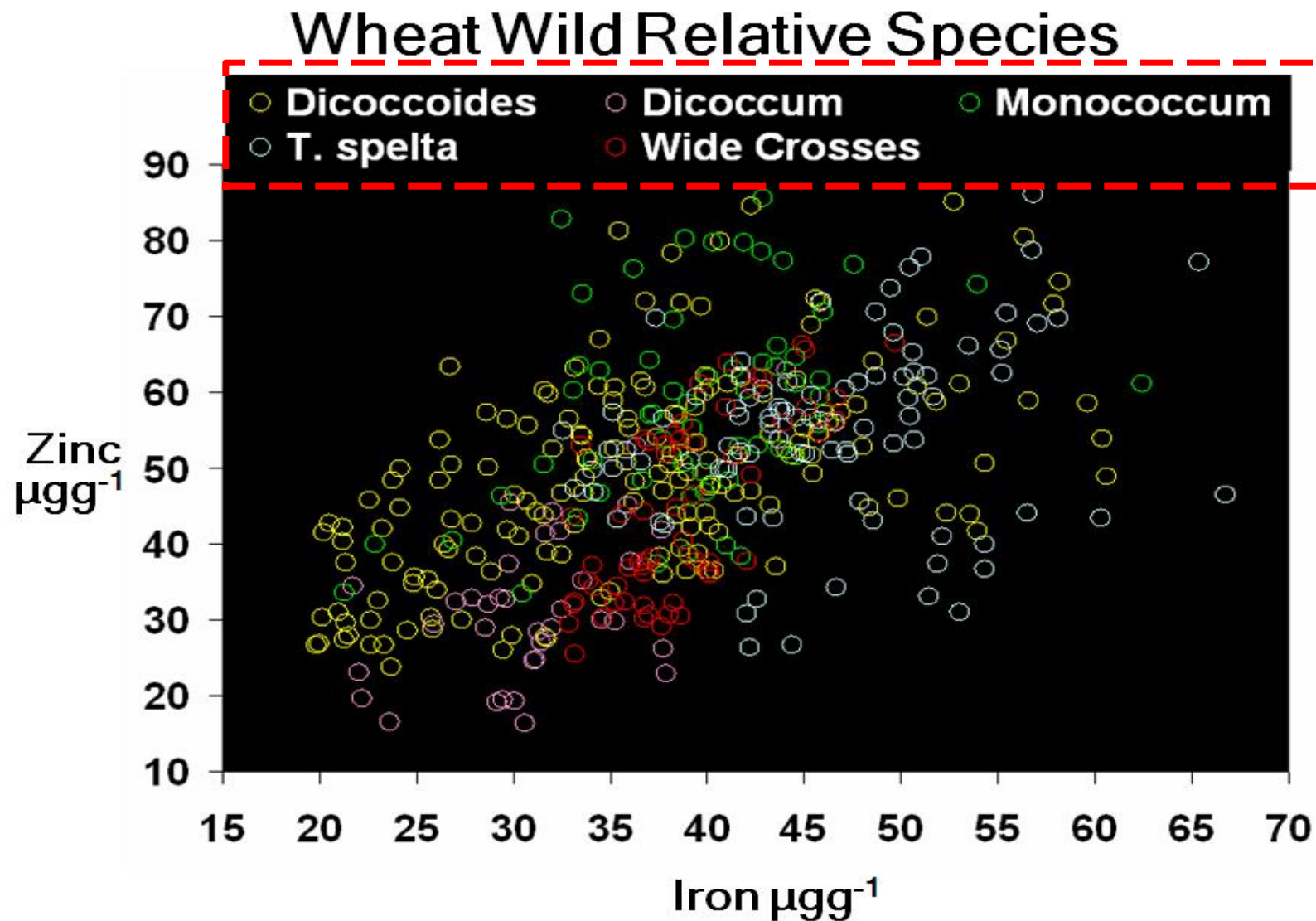


**Biofortified  
wheat  
varieties  
developed  
using  
conserved  
germplasm**



Photo: [biofortified.org](http://biofortified.org)

# Related species are good Zn sources; *T. spelta* appears the best



# Reaching Zn Shakti wheat to farmers - an example

- First tested
- **2013:** 1000 r trials
- **2014:** >6000 farmers ado Shakti whea
- **2015:** >50,00 farmers = 2 household members will benefit

8/26/2015

Zinc-rich wheat variety to be cultivated this year - Newspaper - DAWN.COM

## Zinc-rich wheat variety to be cultivated this year

AMIN AHMED — UPDATED AUG 18, 2015 08:47AM

**Biofortified (HarvestPlus) trial is being evaluated in Nepal for last two years**



Productive partners: *BHU, Sai Seeds, Nirmal seeds, Astha Beej etc.*

# Spring bread wheat releases 1994-2014

In last 5 year  
55 wheat varieties  
released in India, Nepal,  
Bangladesh & Bhutan.

31 CIMMYT  
introductions and 24  
locally bred



EU and other high income countries  
Former Soviet Union Countries

**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!