

CIMMYT AND PAKISTAN

60 years of collaboration



A long-standing partnership that delivers

Dating back to the 1960s, the research partnership between Pakistan and CIMMYT has played a vital role in improving food security for Pakistanis and for the global spread of improved crop varieties and farming practices. Dr. Norman Borlaug, Nobel Peace laureate and first director of CIMMYT wheat research, kept a close relationship with the nation's researchers and policymakers, including CIMMYT's first training course participant from Pakistan, Dr. Manzoor A. Bajwa, who introduced the high-yielding, white-grain wheat variety "Mexi-Pak" from CIMMYT to help address the national food security crisis. Pakistan imported 50 tons of Mexi-Pak seed in 1966, the largest seed purchase of its time, and two years later became the first Asian country to achieve self-sufficiency in wheat, with a national production of 6.7 million tons. In 2019 Pakistan harvested 26 million tons of wheat, which roughly matches its annual consumption of the crop.

Wheat facts and accomplishments

- More than 500 Pakistani wheat scientists have received training since 1961.
- Since 1965, Pakistan has released 140 improved wheat varieties for use by farmers.
- Each year CIMMYT provides approximately 25,000 new wheat lines to strengthen national wheat breeding for disease resistance, drought and heat tolerance, higher yields, and biofortification.
- More than 70% of all wheat varieties grown in Pakistan come from collaborations with CIMMYT.
- 36 high-yielding, heat and disease resistant varieties released over the last 6 years have contributed to a 20% gain in farmers' wheat yields.

In line with Pakistan's National Food Security Policy and with national partners, CIMMYT contributes to Pakistan's efforts to intensify maize- and wheat-based cropping in ways that improve food security, raise farmers' income, and reduce environmental impacts. This has helped Pakistani farmers to figure among South Asia's leaders in adopting improved maize and wheat varieties, zero tillage for sowing wheat, precision land leveling, and other innovations. With funding from USAID, since 2013 CIMMYT has coordinated the work of a broad network of partners, both public and private*, to boost the productivity and climate resilience of agri-food systems for wheat, maize, and rice, as well as livestock, vegetable, and fruit production.

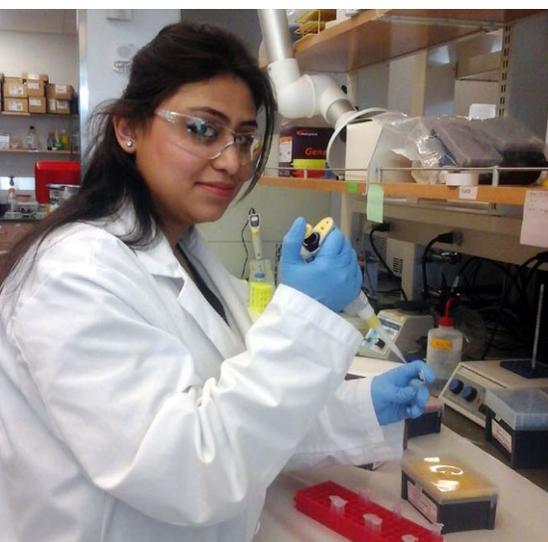


** In addition to national organizations, partners include the International Livestock Research Institute (ILRI), the World Vegetable Center (AVDRC), the International Rice Research Institute (IRRI), and the University of California at Davis (UC Davis).*

- Biofortified wheat varieties that carry enhanced levels of zinc in the grain are now grown on half a million hectares, contributing to better nutrition among those who cannot afford diverse diets.
- A 200% increase in the number of wheat crosses has led to more varietal releases.
- A state-of-the-art Wheat Rust Research Laboratory established at the Crop Disease Research Institute of the Pakistan Agricultural Research Council at Murree is contributing to breeding for durable resistance to new rust pathogen races.

Impacts in maize research-for-development

- A network of partners has tested and deployed more than 3,000 improved varieties and hybrids across 300 environments.
- More than 3,000 Pakistani maize researchers, farmers, students, technicians, managers have received technical and business development training.
- The first national maize stem borer mass rearing facility was established to combat this deadly pest.
- Using CIMMYT parental lines, Pakistan took the lead in South Asia in releasing two new hybrids of quality protein maize, whose grain features enhanced levels of the essential protein-building amino acids,



Maria Solangi from UC DAVIS performs tests for the AIP project at the CIMMYT laboratories in Pakistan.



Years of biofortification research and breeding have resulted in Zincol, a wheat variety with 20 percent more zinc than conventional varieties.

lysine and tryptophan. In addition, three Provitamin A-biofortified maize hybrids have been licensed and shared with partners for seed production.

Accomplishments in the sustainable intensification of farming systems

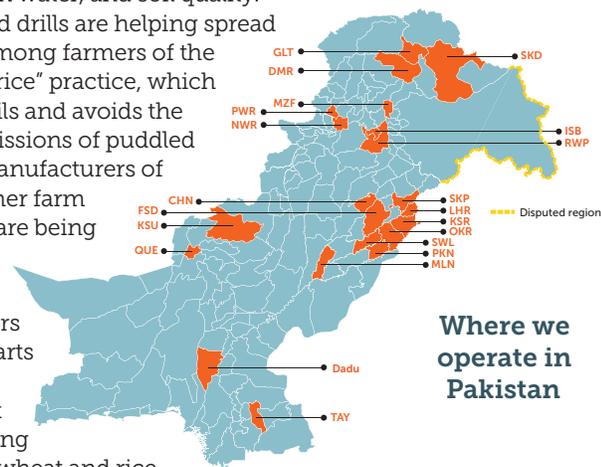
- Agricultural machinery such as the zero-tillage "Happy Seeder" is being promoted to sow wheat seed directly into unplowed soil and crop residues after rice harvest, thus saving time, fuel, irrigation water, and soil quality. Modified seed drills are helping spread awareness among farmers of the "dry-seeded rice" practice, which also saves soils and avoids the methane emissions of puddled rice. Local manufacturers of these and other farm implements are being supported.
- Low-cost optical sensors and color charts for assessing crop nutrient status are being used to help wheat and rice farmers to apply nitrogen fertilizer more precisely, reducing their costs and farm emissions of nitrous oxide, a greenhouse gas over 250 times more powerful than carbon dioxide.

Gender inclusion

- CIMMYT has introduced technologies that ensure equal access for male and female farmers to innovations such as improved seed, machinery and better agricultural practices.
- Since 2014 some 26,000 women farmers have benefitted, including women livestock owners who received training on techniques to increase meat and milk productivity.
- Women have received training on fruit processing, vegetable production and mechanical cotton picking.
- Female social scientists have received training on the use of programs such as SPSS and STATA.



Zero till "Happy Seeder" training in Kala Shah Kaku. Trainings and field days are held regularly by CIMMYT and its partners in Pakistan.



Where we operate in Pakistan

CHN	Chiniot
DMR	Diaramer
FSD	Faisalabad
GLT	Gilgit
KSR	Kasur
KSU	Killa Saif Ullah
LHR	Lahore
MLN	Multan
MZF	Muzafarabad
NWR	Nowshera
OKR	Okara
PKN	Pakpattan
PWR	Peshawar
QUE	Quetta
RWP	Rawalpindi
SWL	Sahiwal
SKD	Sakardu
SKP	Sheikhupura
TAY	Tando Alla Yar
ISB	Islamabad
Dadu	Dadu Sindh

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