A world without hunger is what ICRISAT envisions. With an ever-increasing population, the year 2019 saw us pursue this vision with greater vigor. Mainstreaming nutrition and modernizing the breeding program were top priorities even as we roped in the best of genomic and digital technologies to increase efficiencies and deliver improved farmer-preferred varieties in half the time. Landscape restoration adopting a holistic approach that spans the entire agriculture value chain has shown great impact in improving food security, incomes and climate resilience of farmers. Our partnerships with governments, the public and private sectors, NGOs, NARS and CGIAR partners have helped reap the impacts showcased in this report.

Dr Kiran K Sharma
Deputy Director General-Research, ICRISAT

**Growing incomes, nutrition, resilience and gender equality**

- **Livelihoods**
  - Doubled yields, doubled incomes
  - Pilot watershed projects in India and Ethiopia show how farmers’ incomes can be doubled with landscape restoration and the use of improved varieties.
  - High-yielding and machine-harvestable chickpea variety tested on Indian farms results in tripled yields and savings on labor costs.
  - Improved groundnut varieties triple yields of seed producers in Africa.

- **Agronomy and market traits for released varieties**
  - 1. High grain yield
  - 2. Early maturity
  - 3. Abiotic stress tolerance
  - 4. Biotic stress tolerance
  - 5. Nutrition
  - 6. Grain/pod size
  - 7. Ethanol, biomass, others
  - 8. Culinary
  - 9. Fodder yield
  - 10. Machine harvestability

**Nutrition**

- Biofortification and culinary traits
  - High iron and zinc
  - High iron and zinc
  - Calcium, iron and zinc
  - Protein
  - Digestibility, protein
  - High oleic, protein

*Smart Food study* shows significant increase in growth parameters (BMI and HAZ*) compared to control group in school children fed millet-based meals vs micronutrients fortified, rice-based meals.

*Body mass index (BMI); Height-for-age Z-scores (HAZ).

**Environment & Climate**

- Digital technologies: Launched the *world’s first fully automated system for plot monitoring* called agCelerant that provides climate solutions for Nigerian Agriculture.
  - The Meghdoot App, an ICT-enabled climate tool developed in early 2020, an ICT-enabled climate tool developed in early 2020.
  - Watershed in Africa and India: 64 tons breeder seed
  - Watershed coverage: India, Ethiopia, Mali
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**Gender**

- What women farmers want:
  - Insights were generated on gendered seed knowledge, access and use in Uganda.
  - GENDER Platform focuses on transforming food systems for gender equality in a climate crisis.
  - Gender-responsive Plant Participatory Breeding Programs initiated in Africa.
  - South-South collaborations in agribusiness: Participants from 22 African countries (50% women) trained to be entrepreneurs.
  - Indigenous women farmers in India influence community diets and earn incomes.

*Contributions from the DRR Grant Legumens and Dryland Cereals led by ICRISAT.*