

Plant Genetic Resources

❖ Plant Genetic Resources (PGR) contribute enormously towards achieving the Sustainable Development Goals of

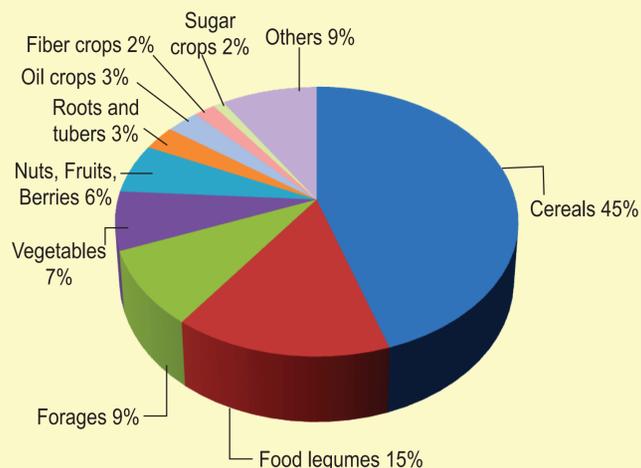
- ▶ Zero hunger
- ▶ No poverty
- ▶ Good health and Well-being

❖ Genetic variation is finite, vulnerable and fast eroding due to

- ▶ modern varieties replacing traditional cultivars, industrialization, urbanization, floods, fire hazards, mining, over grazing and climate change, etc.

❖ PGR therefore, must be conserved to combat new pests and diseases, and to produce high yielding, nutritionally dense cultivars with broad genetic base and better-adapted to the changing climate.

Global germplasm collections



- ❖ 7.4 million accessions conserved globally in ~ 1750 genebanks.
- ❖ 11% (741,319 accessions of 3,346 species) in 11 CGIAR genebanks
- ❖ 17% of total accessions in CGIAR genebanks are conserved at ICRISAT genebank.

ICRISAT Genebank

❖ ICRISAT established its genebank in 1979

Objective

❖ To serve as a world repository for the genetic resources of its six mandate crops and five small millets.

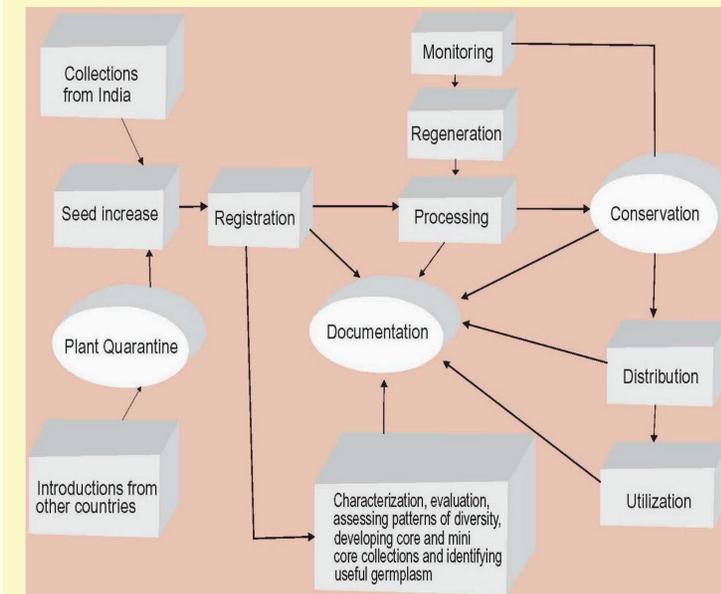
Responsibilities

- ❖ Germplasm assembly
- ❖ Conservation
- ❖ Maintenance
- ❖ Characterization and evaluation
- ❖ Documentation
- ❖ Distribution



View of ICRISAT Genebank.

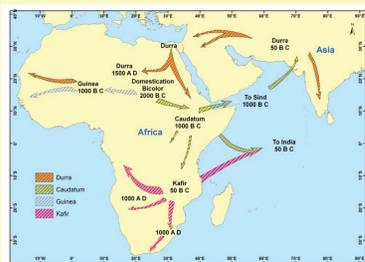
Operational flowchart of ICRISAT Genebank



Our Crops – Origin, Domestication and Movement

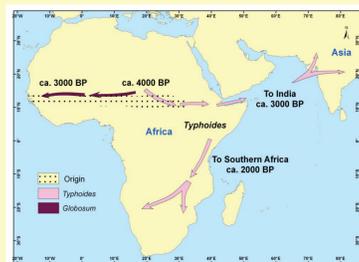
Sorghum

❖ Sorghum [*Sorghum bicolor* (L.) Moench] is an important cereal crop for food, feed, fodder, beverages, etc.



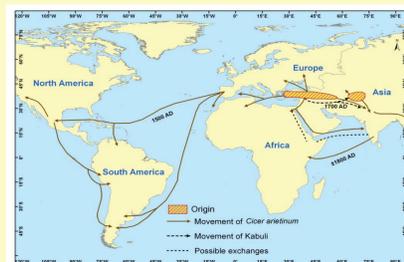
Pearl Millet

❖ Pearl millet [*Pennisetum glaucum* (L.) R. Br.] is a staple food and fodder crop in Africa and parts of Asia, and fodder crop in the Americas



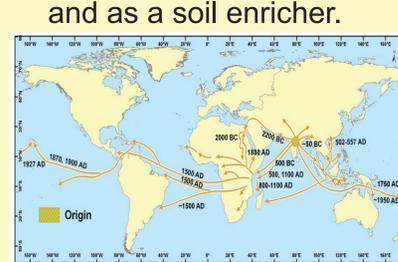
Chickpea

❖ Chickpea [*Cicer arietinum* (L.)], is a rich source of protein and used as food, feed and as a soil enricher.



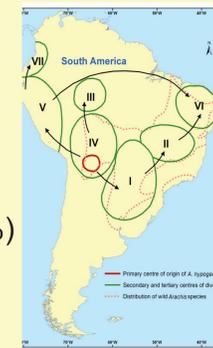
Pigeonpea

❖ Pigeonpea (*Cajanus cajan* (L.) Millsp.) is a rich source of protein and used as food, feed, fuel, for fencing, roofing, basket making and as a soil enricher.



Groundnut

❖ Groundnut [*Arachis hypogaea* (L.)] is an important source for high quality edible oil (about 45%) and easily digestible protein (about 20%) and soil enricher.



Finger millet

❖ Finger millet [*Eleusine coracana* (L.) Gaertn.] is an important source for calcium.



Small millets

❖ Small millets: Foxtail millet [*Setaria italica* (L.) Beauv], barnyard millet [*Echinochloa colona* (L.) Link.], kodo millet (*Paspalum scrobiculatum* L.), little millet (*Panicum sumatrense* Roch. Ex Roem. & Schult) and proso millet (*Panicum miliaceum* L.)

❖ Small millets are rich in micronutrients.

