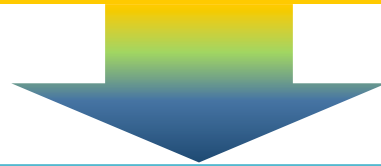


2. Rationale for the Genebank Conservation

Specific question:

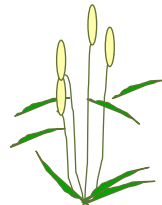
What to conserve? Where to go to collect germplasm?



Evaluation of genetic diversity of germplasm conserved in genebank

- Crop species with different seed/ reproductive characters

- Bread Wheat



- Mango



Evaluation of Genetic Diversity of Bread Wheat Landraces from Pakistan

Hirano et al. Genetic Resources and Crop Evolution, 55(7)1007-1015

- Wheat Landraces in Pakistan
 - Major cereal crop
 - Proximity of the origin of domestication
 - Long history of wheat cultivation
 - Introduction of the Modern High-yield Varieties in 1980's (Green Revolution)



Photo: Courtesy by Ms. Yuko Tanaka

Materials and Methods

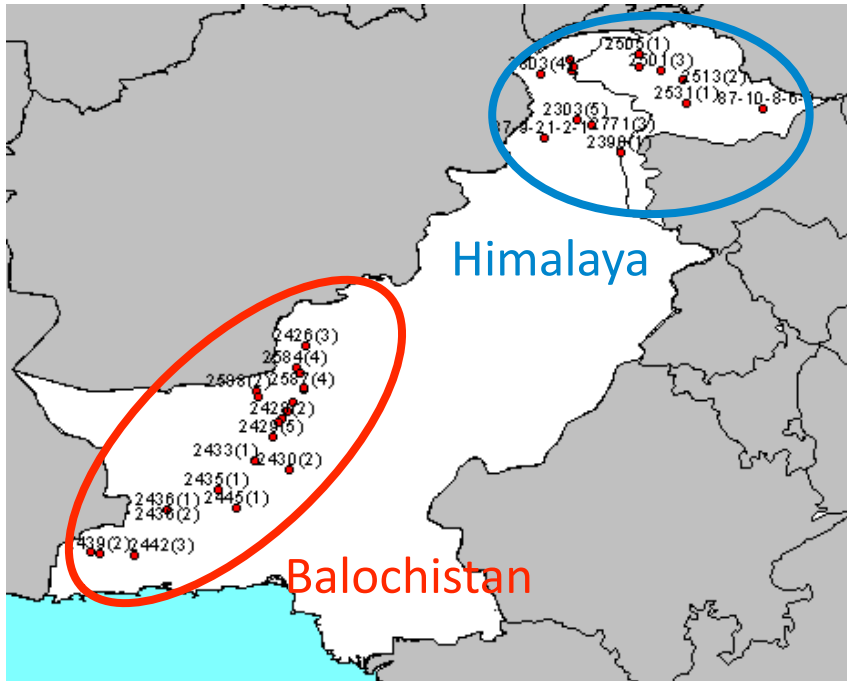


Fig. Map of Pakistan with collection sites

- Wheat landraces collected in Pakistan in 1980's
- Northern and Southwest (different ethnic groups)
- 4 Modern High-yield Varieties (MHVs) promoted by Pakistani government in 1980's
- Amplified Fragment Length Polymorphisms (AFLPs) (Vos *et al.* 1995): Genome wide marker

Results and Discussion

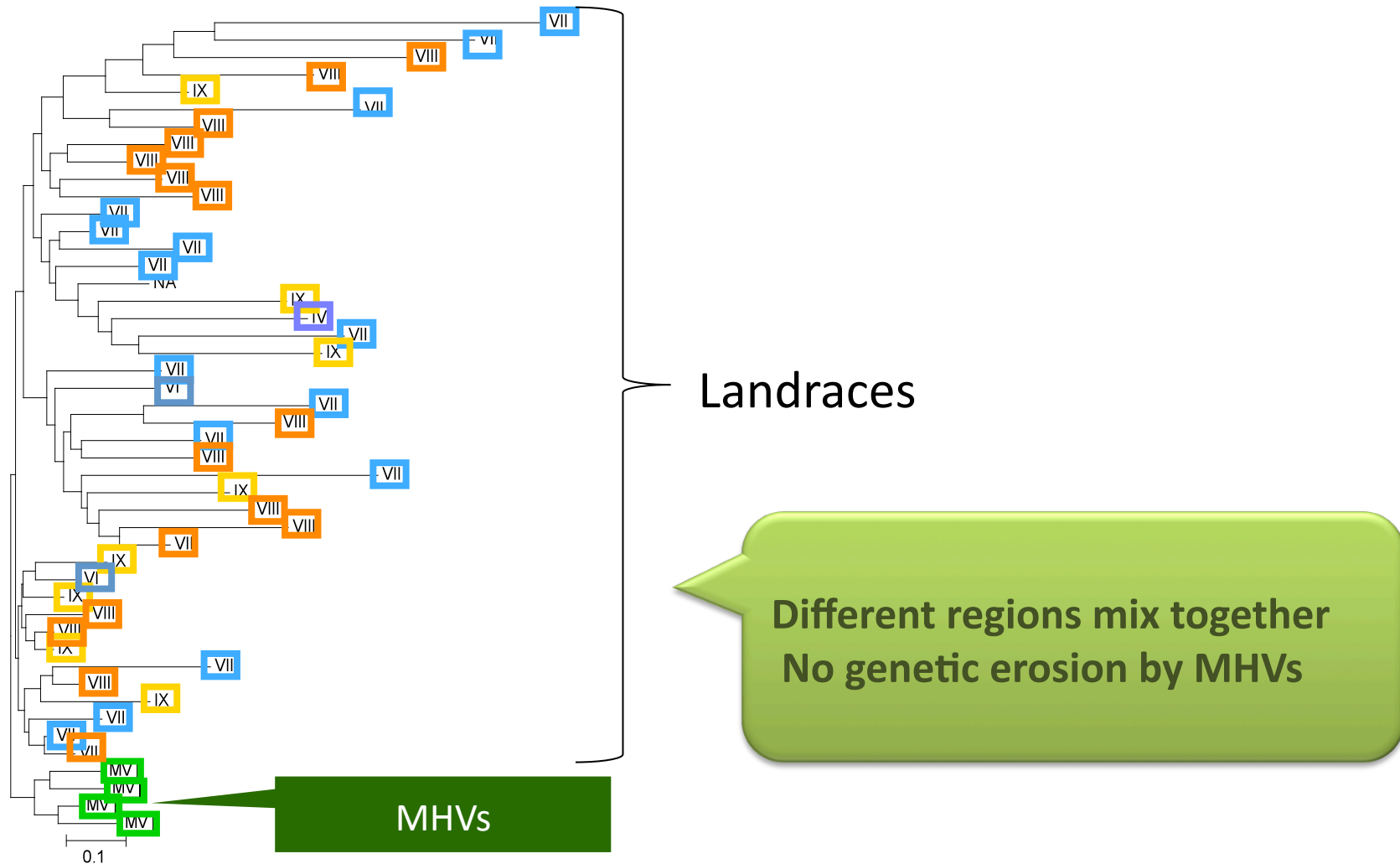


Fig. NJ tree illustrates the genetic relationships of the Pakistan landraces and HYVs

Considerable genetic diversity exists in wheat landraces collected from Pakistan

Table Population data obtained by AFLP result

Population	n	#loc.	Hj	S.E.(Hj)
Himalaya	18	453	0.17	0.0075
Balochistan	22	453	0.15	0.0065
HYVs	4	453	0.15	0.0074

China: Hj = 0.14 (Tian et al. 2003)

Middle East: Hj = 0.23 (Stodart et al. 2005)

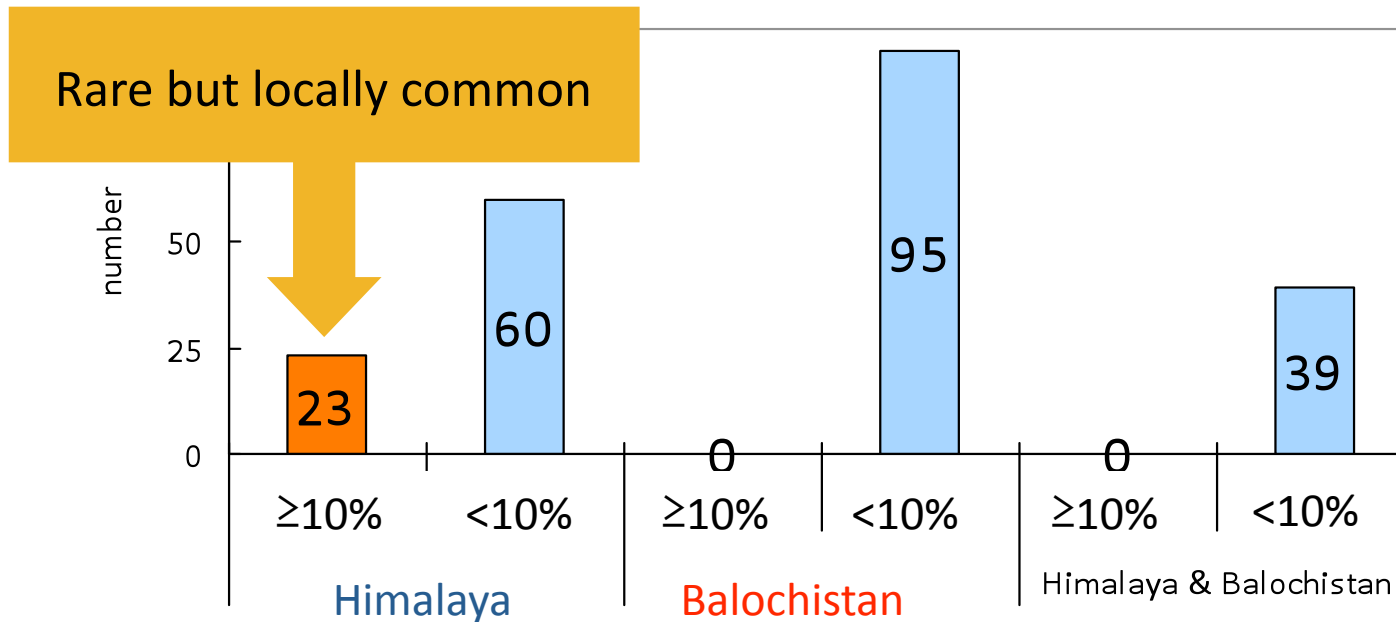
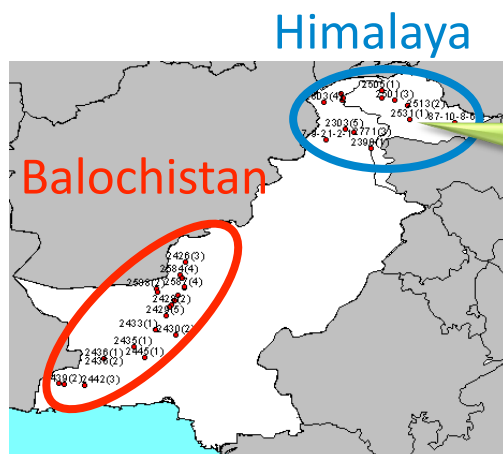


Fig. Number of alleles categorized by the frequency in each area. Only the rare alleles (frequency <5%) found in the country level



Collection in Himalaya area is recommended

Genetic Diversity of Mango (*Mangifera indica* L.) in Myanmar

Hirano et al. Tropical Plant Biology

- Mango in Myanmar
 - Seeds do not survive long time
 - Vegetative propagation (grafting and nucellar embryony)
 - Proximity to the origin of the species (North east India to Myanmar)
 - Important fruits economically and culturally
 - Conservation has initiated but lack of evaluation

