

## ***IN SITU* CONSERVATION OF BARLEY AND DURUM WHEAT IN MOROCCO**

**Keltoum Rh'rib<sup>1</sup>, Mona Taghouti<sup>1</sup>, Ahmed Amri<sup>2</sup>**

<sup>1</sup> Institut National de la Recherches Agronomique (INRA), Cereals Programme, Rabat, Morocco  
E-mail: [krhrib@fusion.net.ma](mailto:krhrib@fusion.net.ma)

<sup>2</sup> ICARDA

Morocco presents a great diversity of environments and farming systems and subsequently is an important niche for more than 4500 species among which 14% are endemic. Morocco is well known as a many economic species especially barley and durum wheat. The local populations of these crops offers an important genepool as sources of adaptation and tolerance to many biotic and abiotic stresses. This important genetic materiel is continuously subject to genetic erosion and the rapid adoption of the newly released varieties has already reduced significantly the acreage grown to landraces in many parts of Morocco. In the mountain and oasis regions of Morocco, however, wheat and barley landraces are still widely grown by farmer. In order to better understand the amount and distribution of the existing diversity of these two crops and on-going farmer management practices that continue to ensure the sustainability of this diversity, three regions in Morocco (Rich, Tanant and Taounate) were selected on the basis of the large use of landraces by farmers, and the cooperation of farmers, local communities, development institutes and non government organizations. Eight-three landraces of barley and durum wheat, collected from the three sites, were characterized for many agromorphological traits for the purpose of assessing the global genetic diversity in the sites, and to understand how farmer based management units, based on traits used by farmers to distinguish these units, relate to different levels of genetic distinctiveness. Statistical results (univariate and multivariate analysis) per trait and for each species, revealed a great genetic variability between and within landraces for the majority of the characters in the 3 sites. On the other hand the variance decomposition showed that the variability within landraces is the most important for the majority of the traits, except awn color and number of spikelets/spike for durum wheat, and spike length and 1000 kernels weight for barley. Factorial correspondence analysis on traits used and not used by farmers grouped the landraces into groups linked by few phenotypic characters. In addition, the quality of seeds of barley and durum wheat used by farmers was evaluated through the germination test and the determination of foreign materials. The results revealed the good ability of germination (percent of germination varying from 92% to 99%) and the good purity (percent of pure seeds varying from 94% to 99%) in local populations still cultivated by farmers in the mountains and desert regions. The fungicide treatment and cleaning of farmer's seed before sowing and chemical weeding were used as adding value techniques for barley and durum wheat. Trials were conducted at farmer's field at each of the 3 sites and on experimental station. The results on two years showed the positive effect of these technologies on grain yields especially the treatment of seeds for the two species.