

LINKING IN SITU CONSERVATION RESEARCH AND PARTICIPATORY PLANT BREEDING: THE CASE OF BARLEY IN MOROCCO

F. Nassif¹ and A. Amri²

¹ Institut National de la Recherche Agronomique (INRA), Settat BP 589, Settat, Morocco.

Tel: +212 23 402626; Fax: +212 23 403209; Email: nassif@settanel.net.ma

² International Center for Agricultural Research in the Dry Areas (ICARDA).
301 ICARDA-Jordan <ICARDA-JORDAN@CGIAR.ORG>.

Barley is grown by the majority of farmers in Morocco, covering an area of more than two million hectares annually, and characterised by its multiple uses as food and feed. While barley is produced across all agro-ecological zones of Morocco, typical barley producing areas are found in the most fragile marginal edges of arid and semi-arid zones characterized by their high intra and inter-annual climatic variability. Although nineteen barley varieties have been developed by the National Agricultural Research Institute (INRA), farmers continue to use barley landraces or what farmers commonly refer to as “chîir beldi”. Socio-cultural and economic studies were undergone to elucidate the reasons behind farmers’ low use of improved barley varieties. Results showed that in addition to the socio-economic and institutional factors of seed unavailability, seed prices and farmer’s limited resources, newly released varieties were not always been adapted to the difficult environments under which barley is produced. In order to better fit farmers’ needs a participatory plant breeding (PPB) project* was initiated with the objectives of 1) understanding farmers’ selection criteria, 2) encouraging and strengthening farmers’ participation in variety development, and 3) offering to farmers a wide range of adapted material to their specific natural and socio-economic conditions. The PPB experience on barley and together with the *in situ* conservation of agrobiodiversity on-farm project (see Nassif1.doc) have mutually reinforcing results. They have been instrumental in rediscovering the importance of barley landraces from both farmer and *in-situ* conservation perspectives. Results included promising lines selected by farmers and breeders, enhanced understanding of farmers’ selection criteria, and the role played by barley landraces in farmers’ fields and minds. While landraces were primarily introduced in participatory on-farm trials as checks, they were systematically and consistently identified and selected by the majority of farmers. From the farmers’ point of view, landraces represented the appropriate mix of adapted material, which has evolved under their own management practices and biotic and abiotic stresses of existing environmental conditions. They also respond to farmers’ search for straw, yield stability and adaptation, rather than high performance. The *in situ* conservation work confirms the adaptation potential embodied in landraces and indicates that adaptation potential is one of the reasons behind farmers’ use and holding on to local cultivars. Lessons learned concern the close relationship between farmers’ use and maintenance of barley landraces and farmers’ desire to attain crop output under highly variable, risk prone and extremely fragile conditions. Another lesson is the realization of farmers’ greater ability to evaluate, differentiate and make selection among hundreds of lines. A third lesson is the strong consistency among men and women farmers in terms of selected lines and selection criteria. Participatory barley breeding and *in situ* conservation research have both been instrumental to enhancing agro-biodiversity conservation in Morocco.

* The authors would like to thank the International Development Research Centre (IDRC-Canada) for its financial support.