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**Participatory Breeding Approach of Neglected Crops — Experience  
With Bambara Groundnut (*Vigna subterranea*) in Northern  
Namibia**

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**Abstract**

The bambara groundnut (*Vigna subterranea*) is an under-utilised African grain legume, mainly grown by subsistence farmers in marginal cropping areas. Up to now, no systematic and co-ordinated breeding efforts have been used for a genetic improvement of the crop. In order to increase the productivity of the bambara groundnut the principle of participatory plant improvement is used in Northern Namibia.

With farmer and consumer surveys, specific preferences and desired traits as seed colour, early maturity are determined. This information is used to characterise an “ideotype”. Simultaneously germplasm and landraces are collected, multiplied and screened in on-station nurseries. Together with farmers and end-users promising material is selected from the nurseries. In one to two seasons of on-station trials the selected lines are thoroughly evaluated. A small sample of the accessions (3-4), selected to meet both, characteristics of the ideotype and superior agronomic performance, is then transferred to selected farmers in different agroecological regions for farmer-managed on-farm experiments. During the cultivation of this sample farmers have to attend a trivial protocol (not to mix seed, add a local variety as comparison, register growing conditions), but in general the farmer’s own cropping practise is applied. During the growing season technical staff is monitoring the crop growth and the farmers conception of the trial. If possible, field days or farmer-to-farmer visits are carried out for further dissemination of information. Data collection includes quantitative data (collected by the technical staff) and qualitative data (from interviews with farmers). Together with farmers and consumers a final evaluation of the trial including cooking and tasting is completing the cycle. All data and information is collated at the Research Station. The feedback from the on-farm-trials is used to refine the “ideotype”.

The concept described above is characterised by a strong interrelation between technical agricultural staff and farmers. Main results from the 2001/2002 on-farm experiments are presented. In a next step the existing indigenous knowledge will be combined with formal breeding strategies. At the end of the project a more general scheme will be developed which could serve as a blueprint for a breeding approach in other neglected crops.

**Keywords:** Legume crops, neglected crop, participatory breeding