



Tropentag, September 14-16, 2010, Zurich

“World Food System —  
A Contribution from Europe”

## Biodiversity as Adaptation Strategy for West African Farmers Towards Climate Variability

LUDGER HERRMANN<sup>1</sup>, BETTINA I.G. HAUSSMANN<sup>2</sup>, PIERRE SIBIRY TRAORÉ<sup>2</sup>

<sup>1</sup>*University of Hohenheim, Soil Science and Petrography, Germany*

<sup>2</sup>*International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Niger*

### Abstract

There are no clear previsions for climate change in West Africa, except that seasonal variability will increase. This is a feature which farmers already acknowledge. The question arises how West African farmers, who are in the majority subsistence oriented, can adapt to this situation in order to increase resilience, food security, and even income?

One option is biodiversity, which in the plant domain can be tackled at three levels: crops, variety and intra-variety. The BMZ-funded interdisciplinary CODE-WA project with the main partners ICRISAT and University of Hohenheim addresses farmer organisations via national research organisations in Niger, Burkina Faso, Mali and Ghana. Two approaches have been developed in order to increase on-farm plant agro-diversity, namely the Opposite Pyramid Approach and the Vertical Farmer Exchange Visit. The first addresses the fast introduction of promising crops and varieties in a participatory approach. Starting with a great number of crops and researcher determined protocols from year to year the number of tested options is decreasing upon farmer decision. In the same timeline freedom of farmers to select management options and crop surface are increasing. The second is based on the exchange of farmers across agro-climatic zones making use of the fact that farmers are willing to learn with priority from other farmers rather than from scientists. Assisted by researchers farmers select and present their own topics.

The first two years experience shows that it is possible to increase plant agro-diversity in relative short periods (3–5 years) and at the same time introduce economically viable and ecologically sound options using adapted and participatory approaches.

**Keywords:** Crops, plant agro-diversity, plant breeding, R4D, soils, varieties