



Tropentag, October 9-11, 2007, Witzenhausen

“Utilisation of diversity in land use systems:  
Sustainable and organic approaches to meet human needs”

## Comparative Studies of Allometrical Parameters of Cashew Trees in Northeast Brazil

ARISOA MAMPIONONA RAJAONA<sup>1</sup>, SANDRA MARIA GUIMARAES CALLADO<sup>2</sup>, MARC J. J.  
JANSSENS<sup>2</sup>

<sup>1</sup>University of Bonn, Agricultural Research and Resource Management in the Tropics and Subtropics,  
Germany

<sup>2</sup>University of Bonn, Institute of Crop Science and Resource Conservation, Tropical Crop Production,  
Germany

### Abstract

The *Anacardium occidentale* L. is native to Latin America and has its primary centre of diversity in Amazonia and a secondary one in the Planalto in Brazil. In the Northeast region of Brazil, areas of more than 650 000 ha are planted with cashew. These areas represent 86,59 % of the national production of cashew, in the states of Ceará, Piauí, Rio Grande do Norte as main producers. Cultivation system of cashew in Northeast Brazil comprises the common cultivation: “Cajueiro Comun”, reproduction cutting: “Cajueiro Atípico” and precocious plants: “Anão Precoce”. Productivity was found to be associated with leaf area and internode length. It was reported that trees with excessive vegetative growth and long internodes bore less than those with slow or medium vegetative growth and conclude that high yield was associated with medium internode and moderate vegetative growth. It will be assumed that growth is essential but should not be favoured in cashew plantation to have a high yielding tree. The aim of the study is to use allometry to compare and evaluate the size of cashew trees and its consequences within different cashew plantation types and under different socio-ecological conditions in Ceará and Piauí. It will contribute to the improvement of cashew cultivation system in Northeast Brazil, in order to increase the production level. First, farming system and activities of farmers in Ceará and Piauí will be studied through a household survey including associated crops or animals. Then, cashew characterisation will be based on field measurement of cashew tree and on biomass partitioning. Finally, allometric parameters will be studied to determine the optimum plant canopy conferring high yield in cashew plantations. In addition, we will assess the market situations and identify other factors contributing to the production of cashew in these regions.

**Keywords:** Allometry, *Anacardium occidentale*, Northeast Brazil