



Tropentag, October 9-11, 2007, Witzenhausen

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

## Determinants of Adoption and Intensity of Use of Balanced Nutrient Management Systems in Northern Guinea

ADEBAYO AKINOLA<sup>1</sup>, AREGA ALENE<sup>2</sup>, REMI ADEYEMO<sup>1</sup>

<sup>1</sup>*Obafemi Awolowo University, Agricultural Economics, Nigeria*

<sup>2</sup>*International Institute for Tropical Agriculture (IITA), Malawi*

### Abstract

The balanced nutrient management systems (BNMS) project was introduced into the northern Guinea savannah of Nigeria (NGS) to assist poor farmers to cope with problems of dwindling soil fertility; the project began in 1997 and it involved testing of a technology package that includes the combined application of inorganic/organic fertiliser (BNMS-manure) and soybean-maize rotation (BNMS-rotation). Demonstration trials started in 2000 in the region. This study employed Tobit regression model to examine factors that influence the adoption and intensity of utilisation of the soil enhancement technologies of BNMS project in the NGS of Nigeria. Empirical results showed that < 10 % of the sample households adopted at least one of the two components of the technology packages at the end of 2001, however, by 2004 the adoption of BNMS-rotation had reached 40 % while that of BNMS-manure had reached 40 %. A number of factors such as access to credit, farmers' perception of the state of land degradation, and assets ownership were found to be significant in determining farmers' adoption decisions on BNMS-manure while off-farm income was found to be significant in determining farmers' adoption decisions on BNMS-rotation. Tobit decomposition results showed that new adopters contributed to intensity of use more than existing adopters of BNMS-manure. Results further showed that extension services, project activities of the International Institute of Tropical Agriculture, and farmer-to-farmer technology diffusion channels were the major means of transfer of BNMS technologies. Findings also showed that BNMS-manure occupied 35 % of the total maize land, BNMS-rotation covered 12 % of the total maize land, and inorganic fertiliser occupied about half of the total maize land in the study area of northern Guinea savannah of Nigeria.

**Keywords:** Balanced nutrient management systems, manure, rotation, inorganic fertiliser