An agronomic evaluation and farmer adaptation of ISFM technologies in cassava- and legume-based systems in Bas-Congo (DRC)

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The TSBF-CIAT-led component of the CIALCA project aims at enhanced resilience of agro-ecological systems (www.CIALCA.org). It uses improved legume germplasm as an entry point to improve livelihoods by enhancing soil fertility, linking farmers to markets and improving the nutritional quality of agricultural produce in DR Congo, Rwanda, and Burundi. DR Congo has been deprived from developmental support and agricultural research during the past decennia. The project has implemented a number of activities, including the introduction and multiplication of improved germplasm, demonstration of ISFM (*integrated soil fertility management*) interventions to enhance crop productivity, and nutritional activities with local health centres, focussing on soybean utilization and transformation.

A large number of farmer adaptation trials have been on-going since February 2008, and farmers have been experimenting with various technologies (including combinations of enhanced intercropping, improved germplasm and efficient input management) in cassava- and legume-based cropping systems. This thesis subject will involve detailed measurements in farmers' fields (analyses of soil fertility, nutrient deficiencies and crop yields), gathering and organizing information and data, and an in-depth analysis of the agronomic performance. Furthermore, information will be collected on local soil quality indicators (LSQI), and these will be linked with formal evaluation of soil type and physico-chemical characteristics. By combining findings, site-specific recommendations for ISFM technologies can be defined, and farmers can learn to implement these based on their local knowledge of soil quality. This work will be conducted in close collaboration with INERA (*Institut National des Etudes et de la Recherche Agricole*).

The student will be based in Kisantu (Bas-Congo). The student will be assisted on a daily basis by the project teams in the area, and supervised by TSBF-CIAT *(Tropical Soil Biology and Fertility Institute of CIAT)* who will regularly be present for technical back-stopping.