



Sustainable Agriculture and Natural Resource Management Collaborative Research Support Program

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Trip Report: Lesotho 1 January 2011 – 17 January 2011

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Purpose of Trip: Cover crop and maize/beans establishment

Sites Visited: Maphutseng, Lesotho

Description of Activities

Conservation agriculture in the region around Maphutseng can be set back by difficulties maintaining sufficient residue cover, which limits the ability of soils to incorporate C. I laid out and planted intercropping trials with a mixture of legumes and grasses. These trials will be monitored to determine the benefits and drawbacks of intercropping in terms of soil C, fertility, and water balance. Observations of the intercropping trial and maize population trial already set up at Maphutseng will allow us to determine whether they will be successful in addressing weed pressures, another factor adversely affecting CA in sub-Saharan Africa. I also observed and collected growth and weed data from the fertility trials already in place at Maphutseng.

While at the Maphutseng research site I provided problem solving support and maintenance on the Bowen ratio units in place there. Bowen ratio units determine the rates of C flux and measure the movement of C throughout the agroecosystem. This instrumentation is extremely useful in measuring discrete amounts of CO₂ but requires some troubleshooting in the field.

Suggestions and Recommendations

More site years of data will be needed to fully understand the nutrient requirements of maize due to the excessive rainfall this past year.